JCOP | Journal of Clinical Oncology Pakistan

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ADVANCING RESEARCH IN CANCER CARE AND CLINICAL PRACTICE



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About

Pakistan Society of Clinical Oncology

PSCO is the largest body to represent all the specialists treating cancer patients in the country. Since the birth of PSCO, Society members are increasing day by day from the various disciplines: clinical oncologists, radiation oncologists, medical oncologists, nuclear physicians, hematologists, pediatric oncologists, surgical oncologists, medical physicists, radiotherapy technologists, and specialist nurses trained in cancer patient management are the part of the society.Clinical oncologists are specialist doctors who treat cancer patients with radiotherapy and systemic therapy including chemotherapy, hormone therapy, targeted agents, immunotherapy, biologic agents, etc, without using surgery.

Clinical oncologists are actively involved in the management of all types of cancer patients in the country in a cost effective manner. They work closely with other colleagues and focus to develop multidisciplinary teams and tumor board meetings to improve the cancer patient management.

Introduction

The Journal of Clinical Oncology Pakistan (JCOP) is a peer-reviewed academic journal established to support the dissemination of high-quality oncology research and to strengthen evidence-based cancer care in Pakistan and the wider region. The journal provides a dedicated platform for clinicians, researchers, and academicians to share scientific work that reflects both global advances and regional healthcare realities.

With rapid developments in cancer biology, diagnostics, and therapeutics, oncology practice continues to evolve toward increasingly multidisciplinary and patient-centered models. JCOP aims to capture this evolution by publishing original research, review articles, clinical studies, case reports, and expert perspectives across the full spectrum of oncology, including medical, radiation, surgical, and pediatric oncology, as well as allied disciplines.

The journal also focuses on emerging and transformative areas such as precision medicine, immunotherapy, molecular diagnostics, artificial intelligence in oncology, and survivorship care, while maintaining a strong commitment to ethical practice, scientific rigor, and editorial independence. As an academic initiative associated with the Pakistan Society of Clinical Oncology, JCOP seeks to promote collaboration, knowledge exchange, and continuous improvement in oncology practice at both national and international levels.

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MAINSTREAM

CHEMOTHERAPY SIDE EFFECT PROFILE IN LOCALLY ADVANCED BREAST CANCER

By Dr. Mehwish Manzoor

Background: Breast cancer is a leading cause of cancer-related mortality among women worldwide. Locally advanced breast cancer (LABC) is more common in developing countries, accounting for up to 50% of cases. The AC-T chemotherapy regimen is widely used for its management but is associated with hematologic and non-hematologic toxicities. Limited local data are available regarding the toxicity profile of chemotherapy in breast cancer patients in Pakistan. Methods: This cross-sectional study was conducted in the Department of Radiation Oncology, INMOL, Lahore, over six months after ethical approval. A total of 100 patients with locally advanced breast cancer receiving the AC-T chemotherapy regimen were enrolled after informed consent. Patients were evaluated for treatment-related toxicities through clinical assessment and laboratory investigations, including complete blood counts. Hematologic toxicities such as anemia and neutropenia, and non-hematologic toxicities including diarrhea and fatigue, were recorded and graded according to standard criteria. Results: All 100 patients were evaluated after receiving the AC-T regimen. Most patients developed treatment-related toxicities ranging from grade 1 to grade 3. The most frequently observed adverse effects included anemia, neutropenia, diarrhea, and fatigue. No patient developed grade 4 or grade 5 anemia. No significant association was observed between toxicities and TNM stage or ECOG performance status. Conclusion: The AC-T chemotherapy regimen was associated mainly with manageable grade 1–3 hematologic and non-hematologic toxicities. The most common adverse effects were anemia, neutropenia, and diarrhea, highlighting the importance of careful monitoring and supportive care during treatment.

NEXT-GENERATION SEQUENCING ANALYSIS REVEALS A STRONG ASSOCIATION BETWEEN BRCA1/BRCA2 MUTATIONS AND FAMILY HISTORY IN PAKISTANI BREAST CANCER PATIENTS

By Dr. Hafiza Rabia Tanveer

Abstract Purpose: This study investigated the prevalence of gBRCA1/2 mutations in Pakistani breast cancer patients with focus on family history and age of disease onset. Method: The next generation sequencing was used to identify pathogenic mutations in BRCA1/2 . Results: A total of 26 pathogenic mutations were identified in 173 families (15%), with 73% mutations in BRCA1 and 27% in BRCA2 gene. The mutation rate was higher in patients with positive family history (22%) than in those without (7%). In <50 years old HR+ subgroup, detection rates were 34.8% with family history and 6.67% without; in TNBC, 24% and 10%, respectively. In <35years old patients with family history, highest rate of gBRCA1/2 mutation in both HR+ (42.86%) and TNBC (45.45%) patients was observed which highlights the importance of BRCA1/2 genetic testing. In >50 years old patients without family history, mutations were absent, contrasting with a 7.14% rate in those with family history. Conclusion: Our study highlights the significant role of family history in enhancing diagnostic yield of gBRCA1/2 mutations in Pakistani breast cancer patients, particularly in younger and older patients. In >50 years old BC patients, family history becomes a prudent consideration for genetic testing.

COMPARISON OF RESPONSE WITH CHEMOTHERAPY VS ENDOCRINE THERAPY AND ITS ASSOCIATION WITH KI 67 IN HORMONE RECEPTOR POSITIVE BREAST CANCER

By Dr. Sundas Rafique

Background: The mainstay of treatment in metastatic hormone receptor positive breast cancer (HR+) is

either palliative chemotherapy or endocrine therapy along with other biologic agents. Ki67 as a prognostic and predictive marker in neoadjuvant and adjuvant settings has led to the belief that it can be used for shaping management strategies in metastatic setting as well. Methods: 100 patients were randomized to two treatment groups i.e. hormone therapy (Tamoxifen in premenopausal and letrozole in post-menopausal women) or chemotherapy (single agent doxorubicin cycles or single agent paclitaxel 3weekly 4 cycles). Response was assessed using RECIST criteria Results: Patients with low Ki67 <20% had 22.2% PR in endocrine therapy group versus 9.5% in chemotherapy group (p-value=0.009) while 71.4% had PD chemotherapy arm compared to 22.2% PD in endocrine arm. However, patients with >20% Ki67 scores had better treatment responses when offered chemotherapy instead of endocrine therapy i.e. 6.9% of cases achieved CR and 31% had PR while only 9.4% had PR in endocrine therapy arm. Moreover, only 31% had PD on chemotherapy while 71.9% showed progression on endocrine therapy (p value 0.009). Conclusion: ki67 score cut off of 20% was significantly associated with different response rates for chemotherapy versus endocrine therapy.

Efficacy of neoadjuvant Chemotherapy followed by concommitant chemoradiotherapy with gemcitabine in Muscle Invasive Bladder Cancer

By Dr. Iqra Saleem

Abstract: Introduction: For muscle invasive bladder cancer (MIBC) neoadjuvant chemotherapy with gemcitabine and cisplatin followed by radical cystectomy (RC) is considered the standard of care. In low resource countries like Pakistan RC is not a feasible option as it requires high quality healthcare facilities and carries significant perioperative mortality. Bladder preservation using trimodality approach (complete TURBT +Radiation therapy with concomitant chemotherapy) is a good alternative which has shown comparable outcomes in various studies. Objectives: To determine the efficacy of neoadjuvant chemotherapy followed by concomitant chemoradiotherapy (CCRT) with gemcitabine in MIBC. Study design: Descriptive study Study duration: 15th October 2021 to 14th April 2022 Settings: Department of Oncology, MINAR Cancer Hospital, Multan. Materials&Methods: A total of 91 patients of 18-60(yrs) age of either gender with confirmed transitional cell carcinoma (TCC) of bladder after TURBT were included. Patients with prior systemic chemotherapy or pelvic radiotherapy were excluded. Treatment was given in approximately 3 months as per our study protocol i.e. neoadjuvant chemotherapy followed by CCRT with weekly gemcitabine. Treatment response was assessed 6 weeks after completion of treatment using MRI pelvis. Results: In my study, the complete response was seen in 68.13%, partial response in 17.58%, progressive response in 9.89% and stable disease in 4.40% patients. Efficacy of neoadjuvant chemotherapy followed by concomitant chemoradiotherapy with gemcitabine in muscle invasive bladder cancer is found in 68.13% patients. Conclusion: Neoadjuvant chemotherapy followed by gemcitabine-based CCRT offers an effective bladder-preserving option for MIBC, achieving a 68.13% complete response rate. This approach is a practical alternative to radical cystectomy in resource-constrained settings, with promising outcomes. Keywords: bladder tumor, neoadjuvant chemotherapy, gemcitabine.

Real-world data on the outcomes of upfront docetaxel in hormone-sensitive metastatic prostate cancer

By Dr. Muhammad Ghufran

Abstract. The present retrospective, single-centre study investigated the efficacy and toxicity of upfront docetaxel chemotherapy in patients with hormone-sensitive metastatic prostate cancer and evaluated the impact in high and low-volume disease. Data from 167 patients with hormone-sensitive metastatic prostate cancer treated between January 2016 and December 2019 were analysed. The data cut-off was February 2024;

the median follow-up time was 37 months and the median age was 66 years. The cohort consisted of varying Gleason scores, with the majority scoring 9 (n=86; 51.1%). Surgical castration was performed in the majority of cases (n=136; 81.4%). Overall, 66 (39.5 %) of the patients had low-volume disease (≤5 sites of metastasis, no visceral metas- tasis), while 101 (60.5%) patients had high-volume disease. Disease progression occurred in 100 patients (59.9%), with a median progression-free survival (PFS) of 47 months (95% CI, 37.503-56.497). The median overall survival (OS) was 71 months. In the comparison of low-volume vs. high-volume disease groups, the median PFS was 57 vs. 47 months respec- tively (P=0.276) and the corresponding median OS was not reached vs. 57 months respectively (P=0.192). Among the 100 patients with disease progression, 20 received second-line therapy. The median OS for untreated patients was 9.88 months, while those treated with antiandrogens was 15.14 months and those with re-challenge chemotherapy was 12.46 months (P=0.496; 95% CI, -6.47-11.83). Grade 3-4 treatment-related toxicities were observed in ~37.8% of patients, while one death was associated with chemotherapy-related neutropenic sepsis. The most common toxicities were mucositis (n=53; 31.7%), febrile neutropenia (n=44; 26.3%) and sepsis (n=29; 17.4%). The present study demonstrated that upfront docetaxel chemotherapy may be an effective and tolerable treatment for hormone-sensitive metastatic prostate cancer, particularly in settings where access to novel antiandrogens is limited, thus potentially offering a viable management strategy amidst resource constraints.

TO Compare the effect of early and delayed radiotherapy on recurrence risk and recurrence free survival in TNBC patients

By Dr. Marriam Zeb Khan

Background: Triple-negative breast cancer (TNBC) is a high-risk subtype that has a high probability of early recurrence. Although adjuvant radiotherapy is known to minimize local recurrence, it is unclear when adjuvant radiotherapy should be administered. Objective: To compare the effect of early and delayed radiotherapy on recurrence risk and recurrence-free survival in TNBC patients. Methods: This was a retrospective comparative study in which the medical records of 200 TNBC patients who underwent surgery and then adjuvant radiotherapy were reviewed from 1st January 2022 to 1st January 2025. Patients were divided into early (<8 weeks) and delayed (9 weeks and above) radiotherapy groups. The baseline demographics, tumor characteristics, treatment details, and outcomes of recurrence were obtained. Data analysis was done using SPSS 25.0. Chi-square and t-tests were used to compare them. Kaplan-Meier analysis and log-rank test were used to determine recurrence-free survival, and Cox proportional hazards regression was conducted to determine independent predictors of recurrence. Results: Among 200 patients, a delay in radiotherapy indicated a much increased overall recurrence rate ($p = 0.004$) and shorter recurrence-free time ($p = 0.012$). On multivariate analysis, delayed radiotherapy ($p = 0.013$) and Stage III disease ($p = 0.022$) was independent predictive factors of recurrence. Findings: Timely radiotherapy is crucial since the late introduction of radiotherapy in TNBC leads to high chances of recurrence. Priorities should be placed on early radiotherapy to enhance the oncologic outcomes.

A RARE CASE OF OVARIAN SERTOLI–LEYDIG CELL TUMOR IN AN ADOLESCENT

By Dr. ASMA ALI DEPAR

Background: Sertoli-Leydig cell tumor is a rare ovarian sex cord–stromal tumor, accounting for less than 0.5% of ovarian neoplasms. It primarily affects adolescents and young women. Clinical presentation is variable and may include abdominal pain, pelvic mass, or androgenic manifestations, which can make preoperative diagnosis challenging. Case Description: A 17-year-old female presented with episodic abdominal pain and progressive abdominal distension for three weeks. Clinical examination and

imaging revealed a large multiloculated solid-cystic abdominopelvic mass with bilateral hydronephroureter. Elevated tumor markers suggested a mixed germ cell tumor. She underwent midline laparotomy with left salpingo-oophorectomy and staging procedures. Final histopathology confirmed a Grade 2 Sertoli-Leydig cell tumor, and adjuvant chemotherapy was planned. Discussion: Sertoli-Leydig cell tumors are uncommon ovarian neoplasms that may or may not present with hormonal features, complicating diagnosis. Imaging findings are often nonspecific, and definitive diagnosis relies on histopathology and immunohistochemistry. Tumor differentiation is critical for prognosis and guides management. Surgical excision is the mainstay of treatment, with generally favorable outcomes in early-stage disease. Conclusion: Although rare in adolescents, Sertoli-Leydig cell tumors should be considered in the differential diagnosis of ovarian masses. Timely recognition, accurate histopathological diagnosis, and appropriate surgical staging are essential for optimal outcomes. Early and tailored management not only improves prognosis but also supports fertility preservation. Reporting such cases enhances awareness and contributes to evidence-based management of these rare tumors.

Synchronous Papillary, Medullary Thyroid carcinoma with Follicular Adenoma, A Rare Case Report

By Dr. Hassan Mehdi

Introduction: Synchronous occurrence of different histological types of thyroid neoplasms within the same gland is rare and presents diagnostic as well as therapeutic challenges. The coexistence of papillary thyroid carcinoma and medullary thyroid carcinoma with a benign follicular adenoma is exceptionally uncommon. Case Presentation: A total thyroidectomy specimen weighing 25 g revealed a 6.5 cm right lobe mass and two left lobe nodules measuring 1.4 cm and 1.2 cm. Histopathology showed the larger left lobe lesion to be minimally invasive follicular variant papillary thyroid carcinoma with capsular invasion and low proliferative index (1/10 HPF), without lymphovascular or extrathyroidal extension. The smaller left lobe lesion was medullary thyroid carcinoma, positive for CD56, synaptophysin, and calcitonin, with capsular invasion and proliferative index of 2/10 HPF. The right lobe mass was consistent with follicular adenoma without capsular or vascular invasion. Final staging was mpT1b, N0, M0. Postoperative CT imaging and whole-body I-131 scan showed no evidence of metastatic disease. Discussion: The simultaneous presence of distinct thyroid malignancies with a benign adenoma suggests divergent tumorigenic pathways. Accurate histopathological and immunohistochemical evaluation is essential to guide staging and postoperative management. Conclusion: This rare combination underscores the importance of meticulous pathological assessment to ensure appropriate diagnosis, risk stratification, and treatment planning.

Anti-TNF Therapy and the Risk of Cancer and Infection in Pakistani Rheumatoid Arthritis Patients: A Case-Control Study

By Dr. Muhammad Nauman Shahid

ABSTRACT Background: Rheumatoid arthritis functions as a persistent autoimmune condition which creates major consequences for patient lifestyle quality. TNF inhibitor medications (anti-TNF therapy) have transformed RA treatment by lowering inflammation yet medical practitioners still worry about their ability to enhance infection and cancer risks. Aim: To evaluate the risk of infection and malignancy in rheumatoid arthritis (RA) patients undergoing anti-TNF therapy, comparing them with those receiving conventional treatment. Methods: A total of 500 RA patients, aged 20-50 years, were recruited from multiple tertiary care hospitals in Lahore, Pakistan. The cohort was divided into two groups: Group A (Non-Biologic, n=250) and Group B (Biologic, n=250). Demographic data, lifestyle factors, disease duration, and biomarkers including CRP, IL-6, TNF-α,

PCT, serum ferritin, immunoglobulin levels, RF, and ACPA were measured. Statistical analyses, including descriptive statistics, t-tests, and logistic regression, were performed. Kaplan-Meier survival analysis was conducted to assess long-term patient outcomes. Results: The Biologic Group showed significantly reduced levels of inflammatory markers (CRP, IL-6, TNF-α) compared to the Non-Biologic Group, indicating better disease control. Elevated immunoglobulin levels (IgG, IgA) in the Biologic Group suggested immune modulation. While infection rates were comparable between both groups, the Biologic Group showed a lower risk of severe disease progression. The Kaplan-Meier survival analysis indicated a statistically significant survival advantage for the Biologic Group ($\chi^2 = 5.67$, $p = 0.017$). Conclusion: Anti-TNF therapy effectively reduces inflammation and improves clinical outcomes in RA patients without introducing significant new health risks. However, regular monitoring for infections and malignancies, especially non-melanoma skin cancers, is essential to optimize long-term safety. The study highlights the therapeutic benefit of biologics while emphasizing the need for tailored patient care and continuous surveillance.

Eccrine Porocarcinoma Presenting as a Breast Lump: A Rare Case Report

By Dr. Mohammad Abdullah Sahi

Eccrine porocarcinoma is a rare malignant neoplasm originating from the intraepidermal portion of the eccrine sweat glands. It only representing 0.005–0.01% of cutaneous neoplasms. Overall, incidence rates are in the range of 0.02–0.2 per 100,000 person. It most commonly occurs in elderly individuals and typically presents as a solitary, slowly growing cutaneous lesion. Because of its variable clinical appearance and indolent course, diagnosis is often delayed and the condition may mimic several benign and malignant dermatological entities. We present the case of a 51-year-old male , who presented with an unusual clinical manifestation in the form of a progressively enlarging breast lump. Radiological assessment followed by histopathological examination confirmed the diagnosis of eccrine porocarcinoma. The patient initially underwent systemic chemotherapy with docetaxel, but due to disease progression, the treatment regimen was modified to a cisplatin-based chemotherapy protocol, after which radiological reassessment demonstrated stable disease with mild regression. This case highlights the importance of early recognition, accurate diagnosis, and multidisciplinary management in improving clinical outcomes in patients with this rare malignancy.

IMPACT OF TUMOR STAGE AND MOLECULAR SUBTYPE ON 3-YEAR LOCO REGIONAL CONTROL AFTER ADJUVANT RADIOTHERAPY FOR STAGE 1-3 BREAST CANCER:A 2022 SINGLE CENTRE COHORT

By Dr. NUSRAT

Association of Tumor Stage and Molecular Subtype With 3-Year Recurrence Outcomes After Adjuvant Radiotherapy in Stage I–III Breast Cancer: A Single-Centre 2022 Cohort Background Adjuvant radiotherapy is a cornerstone of curative-intent treatment for Stage I–III breast cancer, yet real-world recurrence data from low- and middle-income country (LMIC) settings remain limited. Tumour stage and molecular subtype are central prognostic determinants, but their relative contributions to recurrence outcomes after radiotherapy in LMIC centres are poorly characterised. Methods This retrospective single-centre cohort study included 195 consecutive patients with Stage I–III breast cancer diagnosed in 2022 and treated with adjuvant radiotherapy at a tertiary cancer centre in Lahore, Pakistan. The primary endpoint was recurrence-free survival (RFS); secondary endpoints were distant metastasis-free survival (DMFS) and locoregional recurrence-free survival (LRRFS). Kaplan–Meier analyses with log-rank testing and multivariable Cox proportional hazards regression were used to assess associations with stage group (I–II vs III) and molecular subtype. Results RFS events occurred in 64

patients (32.8%). Stage III disease was independently associated with significantly worse RFS (HR 2.182, 95% CI 1.266–3.761; p = 0.005) and DMFS (HR 2.429, 95% CI 1.337–4.411; p = 0.004) in multivariable models. The stage effect persisted across two sensitivity analyses. Molecular subtype was not significantly associated with any recurrence endpoint on univariable or multivariable testing, most likely reflecting statistical limitations inherent to a modestly sized dataset with incomplete systemic treatment data. Conclusion Tumour stage was the most consistent and robust predictor of recurrence after adjuvant radiotherapy in this South Asian cohort. These findings support stage-based risk stratification in routine clinical practice and highlight the need for larger multicentre LMIC datasets with complete systemic-treatment records to clarify subtype-specific recurrence patterns.

AN INSIGHT INTO THE LYNCH SYNDROME: RETROSPECTIVE STUDY OF THE PATTERN OF PRESENTATION AND MANAGEMENT OF LYNCH SYNDROME IN PAKISTAN

By Dr. SARAH KHAN

Title: An Insight into Lynch Syndrome: Retrospective Study of the Pattern of Presentation and Management of Lynch Syndrome in Pakistan Authors: Faraz Faisal Khan[1], Sarah Khan[2], Mujeeb Ur Rahman[1], Maria Qubtia[2], Amer Rehman Farooqi[1] Affiliations: [1] Department of Internal Medicine, Shaukat Khanum Memorial Cancer Hospital and Research Centre, Peshawar, Pakistan. [2] Department of Medical Oncology, Shaukat Khanum Memorial Cancer Hospital and Research Centre, Peshawar, Pakistan. Background: Lynch syndrome (LS) is the most common hereditary colorectal cancer syndrome. Local data regarding its clinical characteristics and survival outcomes in Pakistan remain limited. Methods: This retrospective study included colorectal cancer patients registered between January 2010 and August 2020 with immunohistochemical confirmation of LS. Baseline characteristics and overall survival (OS) were evaluated. Results: A total of 42 patients were included. The mean age at presentation was 44 years, with male predominance (78%). Most patients were from Northern Pakistan (52.4%), and 76.2% had a positive family history. Right-sided colon cancer was observed in 76.2% of cases. Stage II disease was most common (52.4%). The predominant mutations were MLH1 + PMS2 (38.1%), followed by MSH2 + MSH6 (21.4%). The 10-year OS was 88.1%, reaching 100% in patients who underwent pancolectomy. Conclusion: LS appears prevalent in Pakistan, particularly in the northern region. Clinical presentation and survival outcomes are comparable to Western populations.

A RARE CASE OF PRIMARY MALIGNANT MELANOMA OF CERVICAL SPINE HAVING EXTRAMEDULLARY INTRADURAL ORIGIN: A SINGLE CASE REPORT AND LITERATURE REVIEW

By Dr. SARAH KHAN

Title: A Rare Case of Primary Malignant Melanoma of Cervical Spine Having Extramedullary Intradural Origin: A Single Case Report and Literature Review Authors: Irfan Haider[1], Sarah Khan[2], Fawad Ul Qamar[1], Yasir Inam[1], Kashmala Gul[1], Iftikhar Ali Rana[3] Affiliations: [1] Department of Clinical and Radiation Oncology, Shaukat Khanum Cancer Memorial Hospital and Research Centre, Peshawar, Pakistan. [2] Department of Medical Oncology, Shaukat Khanum Cancer Memorial Hospital and Research Centre, Peshawar, Pakistan. [3] Department of Pathology, Shaukat Khanum Cancer Memorial Hospital and Research Centre, Lahore, Pakistan. Abstract Background: Primary spinal malignant melanoma (PSMM) of extramedullary intradural origin is a rare malignant condition with limited current literature regarding its clinical course, magnetic resonance imaging (MRI) findings, treatment strategies, and outcomes. Case description and discussion: This is a

case report of a patient with PSMM who was treated with surgery followed by radiotherapy for his residual disease in Shaukat Khanum Memorial Trust, Pakistan. The clinical and radiological findings of this case were retrospectively analyzed using the Hospital Information System. Conclusion: PSMM of extramedullary intradural origin is a rare malignant tumor that shows characteristic findings on MRI. Surgical resection is the preferred treatment, and radiotherapy is useful for residual disease.

A SUCCESSFUL DOWNSTAGING OF AN IRRESECTABLE DUODENAL ADENOCARCINOMA TO A SUCCESSFUL WHIPPLE'S PROCEDURE, NEVER LOSE HOPE: A CASE REPORT

By Dr. SARAH KHAN

CASE REPORT A SUCCESSFUL DOWNSTAGING OF AN IRRESECTABLE DUODENAL ADENOCARCINOMA TO A SUCCESSFUL WHIPPLE'S PROCEDURE, NEVER LOSE HOPE: A CASE REPORT Authors Maria Qubtia Shaukat Khanum Memorial Cancer Hospital and & Research Centre, Peshawar-Pakistan Amer Rehman Farooqi Shaukat Khanum Memorial Cancer Hospital and & Research Centre, Peshawar-Pakistan Sarah Khan Shaukat Khanum Memorial Cancer Hospital and & Research Centre, Peshawar-Pakistan Syed Irfan Kabir Shaukat Khanum Memorial Cancer Hospital and & Research Centre, Peshawar-Pakistan Tariq Mahmood *Shaukat Khanum Memorial Cancer Hospital and & Research Centre, Lahore-Pakistan Hajira Ilyas Shaukat Khanum Memorial Cancer Hospital and & Research Centre, Peshawar-Pakistan Abstract: Background; Primary adenocarcinoma of the duodenum is a rare malignant tumor that contributes to 0.3–0.5% of all gastrointestinal malignancies. Tumors deemed irresectable and subjected to systemic chemotherapy usually do not maintain a sustained response. Case description and discussion; We present a case of moderately differentiated adenocarcinoma of the duodenum which was deemed irresectable because of involvement of the root of mesentery, mesocolon and superior mesenteric vessels initially. After completion of twelve cycles of chemotherapy with 5 fluorouracil/Folinic acid in combination with Oxaliplatin (FOLFOX regimen), the patient showed clinical improvement and maintained sustained response. Therefore, a repeat trial of dissection was successfully performed, almost a year and half down the line, which was then followed by adjuvant chemotherapy. And he remains in clinical and radiological remission. Conclusion: Therefore, it is important in oncology to keep the avenues for curative treatments open in individuals with good performance status and good treatment response.

Dosi-metric Comparison between Carotid-sparing VMAT and 3DCRT in Early Glottic Cancer Patients Treated with Definitive Radiation Therapy

By Dr. Iqra Nisar

Traditionally, conventional lateral opposed fields or 3DCRT (three-dimensional conformal radiation therapy) technique was used to treat early glottic cancer resulting in high dose to carotid arteries, with lateral opposed fields and 3DCRT techniques. With increasing 10-year survival rates in early glottic cancer patients, there is increased risk of long-term complications such as radiation-induced carotid artery atherosclerosis and stenosis. VMAT can achieve better tumor coverage while significantly reducing radiation exposure to carotid arteries. Keeping this in background, we have conducted prospective study at our institute, aiming at dosi-metric comparison between carotid-sparing VMAT and 3DCRT techniques in early glottic cancer patients. Aims and objectives: Dosi-metric comparison between carotid sparing VMAT and 3DCRT in early glottic cancer patients treated with definitive radiation therapy. METHODS AND MATERIALS: A total of 90 plans were done on 30 patients treated with definitive radiotherapy in early glottis cancer. One target volume for each patient was described from obtained CT data. Three treatment plans were

created for each target volume; 2F-RT, 8.74Gy and 20.60Gy,25.11Gy for 3F-3DRT, VMAT respectively($p<0.05$). CONCLUSION: Conclusion of study is that although all 3techniques result in same coverage of PTV volume but VMAT results in better sparing of bilateral carotid without compromising dose to tumor.

EFFECT OF TUMOR STAGE AND MOLECULAR SUBTYPE ON 5-YEAR SURVIVAL IN BREAST CANCER: SINGLE-CENTRE COHORT

By Dr. ABDUL SAMEE WAQAR

Background: Stage and molecular subtype are key prognostic factors in breast cancer, yet 5-year outcomes from low- and middle-income settings are rarely reported. We describe a single-centre cohort indexed at diagnosis, focusing on stage and intrinsic subtype with 5-year overall survival as the primary outcome. Methods: Retrospective single-centre cohort; biopsy date was set as time-zero. The primary cohort was Stage I–III (curative intent); Stage IV was excluded. Subtypes were divided according to their ER/PR/HER2 status. TNM staging was used to compare overall survival of stage I–II versus stage III. Data cut-off: 12 September 2025. We summarised survival with Kaplan–Meier curves and compared groups with log-rank tests. Adjusted effects were estimated using Cox regression with age and grade as covariables. This interim analysis reports overall survival estimates, with full curves and adjusted models to be shown at presentation. Results: We analysed 79 patients (median age 46 years). Five-year overall survival was 65%. By stage, overall survival was 82% for Stage I–II and 35% for Stage III. By subtype, overall survival was 74% for HR+/HER2-, 68% for triple-negative, 50% for HER2-positive, and 27% for unknown. These patterns were preserved after adjustment for age and grade. Conclusion: In this interim single-centre analysis of curative-intent disease, overall survival separated clearly by stage and showed meaningful differences by subtype. Updated survival curves and adjusted estimates will be presented to inform local quality-improvement and future prospective work.

Real-World Outcomes of Lenvatinib in Advanced Hepatocellular Carcinoma: The Largest Pakistani Cohort and Evidence for Maintained Efficacy at Reduced Doses

By Dr. SARA ISHAQ

Abstract Background: Lenvatinib is established as a first-line systemic therapy for advanced hepatocellular carcinoma (HCC). While pivotal trials demonstrated non-inferiority to sorafenib, real-world outcomes remain underreported from South Asia. Moreover, the efficacy of reduced dosing—frequently necessitated by toxicity—has not been well characterized in Asian populations. Methods: This retrospective cohort included 137 patients with advanced HCC treated with lenvatinib between [2019–2024] at a tertiary cancer center in Lahore, Pakistan. Clinical, radiologic, and virologic features were collected at baseline. Radiological assessment by CT was performed every 8–12 weeks. Outcomes included objective response rate (ORR), disease control rate (DCR), progression-free survival (PFS), overall survival (OS), and tolerability. Subgroup analysis compared outcomes in patients receiving full-dose versus reduced-dose lenvatinib. Results: The majority were Child–Pugh A (87.6%) and ECOG 1 (80.3%). Advanced disease features were common: 74.5% had multifocal tumors, 59.1% macrovascular invasion, and 27.7% extrahepatic spread. Only 4.4% were within Milan criteria. ORR was 24.1% and DCR 59.9%. Median PFS was 7.8 months and median OS 12.1 months. Dose-reduced patients achieved ORR and DCR comparable to full-dose recipients. Treatment discontinuation occurred in 39.4%, mostly due to progression (77.8%), while intolerance accounted for 9.3%. Child–Pugh deterioration occurred in 19% during treatment. Conclusions: This is the largest Pakistani real-world lenvatinib cohort and among the first Asian datasets to show preserved efficacy at reduced doses. These results support personalized dosing strategies in resource-limited settings without compromising therapeutic outcomes.

DEFINITIVE CHEMORADIOTHERAPY OUTCOMES IN CERVICAL ESOPHAGEAL CARCINOMA: A SINGLE INSTITUTION EXPERIENCE

By Dr. MUHAMMAD ABDULLAH NASIR

Background: Cervical esophageal carcinoma accounts for 2–10% of all esophageal cancers. Definitive chemoradiotherapy is the preferred treatment. This study reviews treatment outcomes in patients with CEC treated at a tertiary care university hospital. Methods: A retrospective review was conducted of patients aged >18 years diagnosed with squamous cell carcinoma of cervical esophagus undergoing CRT at Aga Khan University Hospital between 2011-2024. Results: Twenty-five patients were identified. Thirteen patients received definitive chemoradiotherapy at our institution and were included in this analysis. Chemotherapy regimens included Cisplatin/5-Fluorouracil (n=5), Carboplatin + Paclitaxel (n=6), Cisplatin alone (n=2). Radiotherapy doses ranged from 5040–7000 cGy (median 6400), delivered using VMAT (n=8), IMRT (n=2), or 3DCRT (n=3) techniques. Complete response was achieved in 9 patients, 4 had progressive disease. 3 out of 9 developed local recurrence. At a median follow-up of 15 months (range, 3–58 months), 6 were alive without disease, 2 were alive with disease, 2 died of progression, and 3 experienced treatment-related mortality (TRM). All TRM cases occurred in patients who received cisplatin/5-fluorouracil–based CRT. Conclusion: Chemoradiotherapy with Carboplatin + Paclitaxel and a radiotherapy dose (≥66 Gy) was associated with improved survival. Our cohort suggests a dose–response relationship.

MULTIPLE CANCERS OCCURRING IN A FEMALE PATIENT AFTER RENAL TRANSPLANT: A CLINICAL CASE

By Dr. MUHAMMAD ABDULLAH NASIR

Background: Organ transplant is often the last resort for the management of end-stage organ failures, and with it also comes the risk of tissue rejection and immune response against the transplanted organ, which is often managed by immunosuppressants. Discussion: A 40-year-old woman, after her cesarean section for twins in 2012, suffered from a massive postpartum hemorrhage, resulting in bilateral end-stage renal failure. The patient received a renal transplant and was prescribed immunosuppressants to manage the hypersensitivity reaction. In 2018, she found a small nodule over her vulva. Histopathology reports of the lesion were consistent with VIN-III. In December 2024, she presented with vaginal bleeding. Investigations revealed HPV associated Grade III SCC of uterine cervix with minimal parametrial invasion and nodular growth of similar nature in the distal anal canal. Management: She qualified for postoperative chemoradiotherapy to the pelvis and anal canal, which included the challenge to preserve the transplanted kidney present in the pelvis. Management included radiotherapy and weekly carboplatin, and at 8 months of follow-up, the patient is free of disease. Conclusion: Patients undergoing solid-organ transplants on immunosuppressants should be closely followed. Female patients should be advised to receive vaccinations and routine pap smear and anal examination for early detection of these cancers.

Efficacy of Neo-adjuvant Chemotherapy followed by CCRT (VMAT vs 3DCRT) in Locally Advanced Nasopharyngeal Carcinoma

By Dr. Aniqa Latif

Objective: The aim of this study was to determine the efficacy of neoadjuvant chemotherapy followed by concurrent chemo-radiotherapy (VMAT vs 3DCRT) in locally advanced (Stage III-IVA) nasopharyngeal carcinoma conducted at Institute of nuclear medicine and oncology Lahore. Methodology: In this study sixty-four eligible patients (32 treated with VMAT while 32 treated using 3DCRT from 2017-2021) with Stage III-IVA NPC were included. They received neo-adjuvant chemotherapy 3 weekly. Following which patients were given definitive CCRT of 69.96 Gy in 33 fractions (VMAT) & 70Gy in 35 fractions (3DCRT). CT/MRI images were done after 6 weeks of completion of chemo-radiation and were compared with base line imaging for response evaluation. Follow up visit reports were checked and patients were contacted for local recurrence, distant metastasis, OS, DFS and chronic xerostomia data collection. Results: Complete response was observed in 18/32 cases treated with 3DCRT while 25/32 cases treated with VMAT. Partial response was observed in 12/32 (3DCRT) & 6/32 (VMAT). Local recurrence was observed in 8/32 cases treated with 3DCRT and 1/32 cases treated with VMAT, distant metastasis were seen in 12/32 cases (3DCRT) and 6/32 cases (VMAT) , overall survival (OS) at 3years after completion of treatment was seen in 17/32 cases (3DCRT) and 22/32 cases (VMAT), disease free survival at 1 year was seen in 24/32 cases (3DCRT) while 29/32 cases (VMAT) and DFS at 3years was seen in 13/32 cases (3DCRT) while 22/32 (VMAT).Out of 32 patients treated with 3DCRT 22 had grade 2 xerostomia,6 had grade 1 & 4 patients were spared while out of 32 patients treated with VMAT 11 had grade 2 xerostomia,10 had grade 1 & 11 patients were spared.p=0.01 Conclusion: VMAT is better radiation technique in locally advanced nasopharyngeal carcinoma as it leads to less toxicity(chronic xerostomia) with statistically significant results but treatment response and survival results were not significant.

CHALLENGING THE PARADIGMS OF CERVICAL CANCER TREATMENT: NEOADJUVANT CHEMOTHERAPY WITH THREE-WEEKLY CARBOPLATIN AND PACLITAXEL FOLLOWED BY CONCURRENT CHEMORADIATION FOR LOCALLY ADVANCED CERVICAL CANCER

By Dr. SIMRA QURESHI

Title: CHALLENGING THE PARADIGMS OF CERVICAL CANCER TREATMENT: NEOADJUVANT CHEMOTHERAPY WITH THREE-WEEKLY CARBOPLATIN AND PACLITAXEL FOLLOWED BY CONCURRENT CHEMORADIATION FOR LOCALLY ADVANCED CERVICAL CANCER Authors: Dr. Simra Qureshi (MINAR CANCER HOSPITAL/ SHAUKAT KHANUM HOSPITAL) Background: We conducted a retrospective study in women with locally advanced cervical cancer treated with neoadjuvantthree-weekly paclitaxel and carboplatin chemotherapy followed by concurrent chemoradiation (CRT) and assessed the efficacy of this regimen on response rate, overall survival (OS) and progression free survival (PFS). Methods: This is a retrospective observational study which included 222 patients, with locally advanced cervical cancer (stage IIB-IVa). Patients received two cycles of three-weekly carboplatin (AUC5) and paclitaxel (175 mg m ^{2}) followed by CRT (40 mg m ^{2} of weekly cisplatin, 50.4 Gy, 28 fractions plus brachytherapy). The primary end point was response rate 12 weeks post-CRT. Secondary end points were 3-years OS and PFS. Results: Baseline characteristics were: median age at diagnosis 49 years; 90% squamous, 8% adenocarcinoma and 2% adenosquamous histologies; FIGO stage IIB (27%), IIIA (4%), IIIB (5%), IIIC1 (50%), IIIC2 (10%) IVA (4%). Completeresponse rate was 60% and partial response rate was 27% post-CRT. Whereas, 2% had stable disease and 11% had progressive disease. Overall and progression-free

survivals at 3 years were 74% and 64% respectively. Grade 3/4 toxicities were 4% during neoadjuvant chemotherapy (NACT). Conclusion: A good response rate, OS, and PFS is achieved by NACT with three-weekly carboplatin and paclitaxel followed by radical CRT. This treatment regimen is feasible as evidenced by the acceptable toxicity of NACT.

CLINICAL OUTCOMES IN HEAD AND NECK ADENOID CYSTIC CARCINOMA: EXPERIENCE FROM A TERTIARY CARE HOSPITAL

By Dr. KAYNAT SIDDIQUI

CLINICAL OUTCOMES IN HEAD AND NECK ADENOID CYSTIC CARCINOMA: EXPERIENCE FROM A TERTIARY CARE HOSPITAL Kaynat Siddiqui1, Bilal Ahmed1, Fabiha Shakeel1, Sarah Akhtar1, Bilal Mazhar Qureshi1, Ahmed Nadeem Abbasi1, Asim Hafiz1 1The Aga Khan University Hospital, Karachi Background Adenoid cystic carcinoma is a rare salivary gland cancer with perineural invasion and a tendency for late recurrence. It is usually treated with surgery followed by radiotherapy. This study reports a decade-long experience of managing head and neck ACC at our center, highlighting outcomes in a setting where advanced presentation is common. Methods This was a retrospective review of all head and neck ACC cases treated at our center from 2011 to 2018. Data on demographics, tumor site, surgical management, adjuvant radiotherapy, and local and regional recurrences were collected from clinical records. Analysis was performed using SPSS version 27. Results Among 62 patients (mean age 37.6 years), the parotid gland was the most common site (21%). Most underwent surgery (90%), with 45% receiving adjuvant radiotherapy. At a median follow-up of 36 months, local recurrence occurred in 25%, regional recurrence in 7%, and distant metastases in 27% (mainly lung and bone). Overall mortality was 5%. Conclusion ACC is a slow-growing tumor most commonly involving the salivary glands. Adequate surgical resection and postoperative radiotherapy . contribute to better local control. However, local and regional recurrences remain common and often occur years after initial treatment

POST-MASTECTOMY RADIATION THERAPY (PMRT) AFTER IMMEDIATE BREAST RECONSTRUCTION: ADHERENCE TO ESTRO ACROP CONSENUS GUIDELINES IN A TERTIARY CARE SETUP

By Dr. SARAH AKHTAR

OBJECTIVE: To assess compliance with normal tissue dose constraints as per the ESTRO ACROP consensus guideline during postmastectomy radiation therapy (PMRT) after immediate breast reconstruction and to evaluate potential radiation-related side effects. INTRODUCTION: Breast cancer is the most common non-skin malignancy among women worldwide. Immediate breast reconstruction, either implant-based or autologous, is increasingly used in early-stage cases to preserve cosmesis and improve outcomes (1). PMRT is guided by tumor characteristics and prognostic risk, but presents challenges in reconstructed breasts, where the aim is optimal coverage with minimal toxicity (2). Accurate contouring requires knowledge of anatomy, surgical modifications, and disease-specific factors. ESTRO ACROP recommends contouring reconstructed tissues and implants as organs at risk (OARs), in addition to heart, lungs, liver, thyroid, and brachial plexus (3). Implant dosimetry is crucial, as radiation increases the risk of infection, contracture, and implant deformity (4). METHODS: Patients with breast cancer receiving adjuvant radiotherapy after mastectomy and immediate implant-based reconstruction were included. Normal tissue dose constraint compliance was evaluated in 3DCRT, VMAT, and IMRT plans. Dosimetric endpoints included ipsilateral lung V17, mean heart dose, and mean implant dose, analyzed via dose-volume histograms (DVHs). All planning was performed on the Aria-15 Eclipse workstation by clinical medical physicists. RESULTS: Among 11 patients, 9 received VMAT and 2

IMRT. Mean implant dose was 38.56 Gy (37.47–41.35 Gy), ipsilateral lung V17 averaged 22.52 Gy, and mean heart dose was 4.66 Gy. All values met ESTRO ACROP OAR constraints. Inclusion of the ventral implant surface in the CTV ensured coverage. Higher implant doses correlated with increased capsular contracture and cellulitis risk (5). CONCLUSION: PMRT after immediate breast reconstruction can be safely delivered in compliance with ESTRO ACROP guidelines. Minimizing implant dose is critical to optimize long-term outcomes.

FREQUENCY AND SEVERITY OF ACUTE TOXICITY OF PELVIC RADIOTHERAPY

By Dr. SHAZIA KHALIQUE

Frequency and Severity of Acute Toxicity of Pelvic Radiotherapy for Gynecological Cancer Presenter: Dr. Shazia Khalique Supervisor: Dr. Hina Hashmi Department of Radiation Oncology, Atomic Energy Medical Centre, Karachi Background Gynecological cancers such as cervical, uterine, ovarian, vaginal, and vulvar cancers are major causes of morbidity among women. Pelvic radiotherapy is an important treatment modality for these malignancies. However, radiation to the pelvic region can cause acute toxicities involving gastrointestinal, genitourinary, and hematological systems. These toxicities may affect treatment compliance and quality of life. Local data regarding the frequency and severity of these toxicities in Pakistani patients are limited. Objective To determine the frequency and severity of acute toxicity associated with pelvic radiotherapy in patients with gynecological cancers. Methodology Study Design: Cross-sectional study Study Setting: Department of Radiation Oncology, Atomic Energy Medical Centre, Karachi Duration: 1 year Sample Size: 209 patients Sampling Technique: Consecutive sampling Inclusion Criteria Patients aged 18–70 years Diagnosed with gynecological cancers receiving pelvic radiotherapy Assessment of Toxicity Hematological toxicity: Common Toxicity Criteria (CTC v2.0) Gastrointestinal & genitourinary toxicity: RTOG/EORTC criteria Follow-up period: Up to 3 months after radiotherapy Data Analysis Analysis using SPSS version 25 Quantitative variables: Mean ± SD Qualitative variables: Frequency and percentage Chi-square test applied to assess association ($p \leq 0.05$ considered significant) Expected Outcome / Significance Determine the frequency and grading of acute toxicities following pelvic radiotherapy. Provide local data for better patient monitoring and supportive care. Help improve treatment planning and patient quality of life. Conclusion : Pelvic radiotherapy is an essential treatment modality for gynecological cancers but is associated with a spectrum of acute toxicities. Identification of the frequency and severity of these toxicities will help in early recognition, timely management, and prevention of treatment interruptions. The findings of this study will provide valuable local data and contribute to improving patient care and treatment outcomes.

Dosimetric Comparison of VMAT, IMRT, and 3DCRT for Post-Mastectomy Radiotherapy in a Breast Cancer Patient with Severe Chest Deformity: A Case Report

By Dr. ZUHA WAHEED

Dosimetric Comparison of VMAT, IMRT, and 3DCRT for Post-Mastectomy Radiotherapy in a Breast Cancer Patient with Severe Chest Deformity: A Case Report Authors: Zuha Waheed, Mohsin Shehbaz, Jannat Asif, Neha Inayat, Zainab Batool Affiliation: Department of Radiation Oncology, Cancer Care Hospital and Research Centre, Lahore, Pakistan Background: Radiotherapy planning for breast cancer patients with kyphoscoliosis is technically challenging. Spinal deformity alters the normal anatomical relationship between the chest wall and adjacent organs at risk (OARs), displacing the heart and lungs into the intended treatment field and increasing the risk of inadvertent radiation exposure to critical structures. Case Presentation: We present a 55-year-old postmenopausal woman with poliomyelitis-induced kyphoscoliosis diagnosed with right-sided breast cancer, staged ypT3N0M0 following neoadjuvant

chemotherapy and right modified radical mastectomy. Adjuvant radiotherapy to the right chest wall was planned. CT simulation confirmed significant displacement of mediastinal structures. Target volumes were delineated per RTOG contouring guidelines. Three plans VMAT, IMRT, and 3DCRT were generated on the same dataset, each prescribing 40 Gy in 15 fractions. Dose-volume histogram analysis demonstrated that VMAT and IMRT achieved superior target coverage and better dose conformity. However, 3DCRT was selected for treatment delivery owing to its favorable heart and esophagus dose profile and the absence of deep inspiration breath-hold technique in our institute. Conclusion: In breast cancer patients with severe kyphoscoliosis, distorted thoracic anatomy presents unique dosimetric challenges. Comparative planning across multiple techniques is essential, as no single approach uniformly optimizes both target coverage and OAR sparing. DVH-guided technique selection allows for the most appropriate and individualized treatment decision.

MUCINOUS ADENOCARCINOMA INVOLVING THE TESTIS WITH INTESTINAL IMMUNOPHENOTYPE PRESENTING WITH DELAYED INGUINAL AND PULMONARY METASTASES: A CASE REPORT

By Dr. NEHA BINT-E-INAYAT

Background: Testicular tumors are predominantly germ cell in origin, while tumors of epithelial origin such as mucinous adenocarcinoma are usually metastatic. Distinguishing primary testicular mucinous tumor from metastatic gastrointestinal adenocarcinoma can be challenging due to overlapping histologic and immunohistochemical features. Case Presentation: We report case of a 50-year-old diabetic and hypertensive male who underwent left orchiectomy in 2021 for scrotal swelling. Histopathological examination revealed a 4 x 3 cm mucinous adenocarcinoma (pT1b) with negative surgical margins. The patient did not receive any adjuvant therapy at that time. Three years later, he presented with a progressively enlarging left inguinal swelling. Excision biopsy of the inguinal mass revealed metastatic moderately differentiated adenocarcinoma. A Computed tomography scan demonstrated a left inguinal nodal mass and pulmonary nodules suspicious for metastases. Immunohistochemistry was positive for CK20, CDX2, and SATB2, and serum carcinoembryonic antigen(CEA) was elevated to 19.3 ng/mL, suggesting an intestinal origin. The patient received six cycles of capecitabine and oxaliplatin (CAPOX) with partial radiologic response. Conclusion: Testicular mucinous adenocarcinoma should be considered a diagnosis of exclusion. This case highlights the importance of thorough upper and lower gastrointestinal tract evaluation before labeling it as a primary tumor of testes.

Coexisting Pediatric High grade Glioma and T cell Lymphoblastic lymphoma

By Dr. ALI HAIDER KHAN

Coexisting Pediatric High-Grade Glioma and T-Cell Lymphoblastic Lymphoma: A Rare Dual Malignancy Dr. Ali Haider Khan1 Dr. Muhammad Shafiq 2 Dr Usama Rehman3 Department of Clinical Oncology, Cancer Care Hospital & Research Centre, Lahore, Pakistan Introduction: Pediatric high-grade gliomas are aggressive brain tumors with a generally poor outlook, even when treated with surgery, radiotherapy, and chemotherapy. The occurrence of a high-grade glioma alongside a blood cancer such as T-cell lymphoblastic lymphoma is extremely rare. Reporting such cases is important to help doctors understand how best to diagnose and manage these rare situations. To date, only a single comparable case has been documented — a seven-year-old with synchronous T-cell lymphoblastic lymphoma and CNS High Grade Glioma without prior irradiation underscoring the extreme rarity of this coexistence and the importance of reporting additional cases to expand the knowledge base and guide management. [1] Keywords: Pediatric high-grade

glioma, T-cell lymphoblastic lymphoma, synchronous malignancy, dual primary cancer, case report Case Presentation: A 10-year-old girl came to us with a two-and-a-half-month history of severe, persistent headaches that did not improve with painkillers. She also had episodes of vomiting. An MRI of the brain showed a large mass (5.5 × 6.2 × 4.2 cm) in the right temporal lobe with swelling and early signs of herniation. She underwent urgent right temporoparietal craniotomy in April 2025, with near-total removal of the tumor. The biopsy confirmed a WHO grade 4 high-grade glioma with a high Ki-67 index. She was given adjuvant conformal radiotherapy (54 Gy in 30 fractions), which was completed on 7th August 2025. About two weeks later, she developed a firm, mildly tender swelling on the left side of her chest wall measuring about 5 cm. A biopsy confirmed T-cell lymphoblastic lymphoma. She was referred to a tertiary pediatric oncology center for chemotherapy for lymphoma while continuing maintenance temozolomide (100 mg, Days 1–5 every 28 days, 12 cycles planned) for the brain tumor. Discussion: Having two different primary cancers at the same time in a child who has not had prior treatment is extremely rare. This situation raises the possibility of an underlying cancer-predisposition syndrome such as Li-Fraumeni syndrome or mismatch repair deficiency, although it might also be coincidental. Treating both cancers together is challenging — treatment must be carefully balanced to control both diseases while avoiding excessive toxicity. Close follow-up with regular imaging and systemic evaluation is important to monitor for new cancers or relapses. Conclusion: We report a very rare case of a child with both a high-grade brain tumor and T-cell lymphoblastic lymphoma. This case highlights the need for early diagnosis, prompt tissue confirmation, and close coordination between neurosurgeons, oncologists, and radiation specialists to give the best possible outcome for such complex cases. References: 1. Thakur S, Chattopadhyay S, Shukla V, Thakur D, Mandal P. Synchronous T-cell lymphoblastic lymphoma and high-grade glioma in a seven-year-old child without prior irradiation: A case report and review of the literature. Cureus. 2025 Aug;17(8):e73485. doi:10.7759/cureus.73485. PMID: 40546517 https://pubmed.ncbi.nlm.nih.gov/40546517/

Temporal lobe Plasmacytoma with Orbital Extension Revealing Multiple Myeloma: A Case Report

By Dr. ALEESHA ILYAS

Abstract Background: Multiple myeloma (MM) is a systemic plasma cell neoplasm that rarely presents with brain tissue involvement. Temporal bone and brain tissue extension are exceptionally uncommon and can mimic meningioma, lymphoma, or primary brain tumors. Such presentations highlight the need for early recognition and systemic evaluation. Case Presentation: A 52-year-old woman presented with complaints of proptosis and gradual loss of vision for 2 months. She also has a history of headaches for 18 months. MRI brain done in March 2025 showed multiple neoplastic intraosseous and right temporal brain tissue lesions largest lesion arising from right temporal tissue, 3.8×4.3×5.3 cm, having intracranial extra axial extension. CT brain plain done on 5 April 2025 revealed multiple lytic calvaria lesions. Right temporal region lytic lesion with soft tissue component of 2.4× 0.8×2.8 cm and another dominant 3.8 × 3.5 × 3.0 cm right temporal bone with mass effects. The right temporal lesion was excised, and histopathology turned out to be a plasma cell tumor. Microscopy showed sheets of plasmacytoid cells having eccentric nuclei and a stippled chromatin pattern. On immunohistochemical staining, CD138 was positive, and kappa and lambda were negative. Bone marrow biopsy confirmed 80% plasma cell infiltration. Whole body low-dose CT scan revealed extensive skeletal disease. Conclusion We planned whole brain radiotherapy (WBRT) of 30 Gray in 10 fractions with palliative intent. WBRT was completed on 22nd July, 2025. After WBRT, the patient has been planned for 6 cycles of bortezomib, lenalidomide, and dexamethasone (VRD). Until now patient has received 5 cycle. Response evaluation will be done after completion of chemotherapy.

OVARIAN STEROID CELL TUMOR WITH STRIKINGLY ELEVATED CA-125LEVEL: A CASE REPORT

By Dr. TALEEHA MOAZAM

Abstract: Introduction: Steroid cell tumors are classified as 'pure stromal tumors' which are secretory in nature. Hormonal overproduction may lead to the clinical manifestations such as virilization, subfertility, precocious puberty and Cushing's syndrome. Case Description: 38 years old, married nulliparous woman presented in out-patient department with complain of distended and painful abdomen for 2 months. History revealed that patient had secondary amenorrhea, hirsutism and increased body mass index (BMI). She is known diabetic and hypertensive with no family history of ovarian malignancy. On examination, she had a huge palpable abdominal mass along with positive shifting dullness indicating gross ascites. Contrast-enhanced computed tomography of abdomen and pelvis showed 12.7 x 10.1 x 6.7 cm complex left adnexal mass along with omental stranding and gross abdominopelvic ascites. Ca-125 level was grossly raised to 2429 U/ml. Suspicious features like complex ovarian cyst, abdominopelvic ascites, omental stranding & markedly elevated Ca-125 were suggestive of malignancy. Total abdominal hysterectomy, bilateral salpingo-oophorectomy and infracolic omentectomy was done. Surprisingly, histopathology turned out to be benign i.e. left ovarian steroid cell tumor. The omental tissue depicted chronic inflammatory changes. Soon after surgery, Ca-125 was reduced to normal value i.e. 20.97 U/ml. Practical Implications: The atypical presentation of benign steroid cell tumor of ovary has highlighted the need to consider benign tumors in differential diagnoses of ovarian tumors that present with signs of hyperandrogenism. Pre-operative hormone levels should have been done to get a preoperative hint of secretory (benign) ovarian tumor. Keywords: Sex cord gonadal stromal tumor, Hyperandrogenism, Immunohistochemistry, Case Report, Ascites

A rare case of Primary follicular bone lymphoma with multiple osteolytic lesions

By Dr. TOOBA KHALID

ABSTRACT Introduction: Primary bone lymphoma (PBL) is a rare clinical entity, accounting for less than 5% of all extranodal non-Hodgkin lymphomas and approximately 5% of primary bone tumors. Diffuse large B-cell lymphoma (DLBCL) is the most common histotype, accounting for about 80% of all PBL cases. Conversely, the incidence of indolent primary bone lymphomas (iPBL) represents less than 1% of all reported PBL cases, and data on these rarer lymphomas are very rare. We present a case of 42 yrs old male presented with back ache and bone pains for last 7 months on diagnostic workup CT Neck Chest Abdomen and Pelvis showed multiple bony lesions with no visceral nodal and extra nodal metastasis on bone marrow trephine biopsy low grade B cell NON HODGKIN'S LYMPHOMA immunomorphology is suggestive of follicular lymphoma diagnosed as primary bone lymphoma CD 45+ CD20+ CD10+ BCL2 +VE FILLIPI SCORE was 3 , B- type symptoms present GELF CRITERIA was 1 and patient is under treatment systemic therapy is planned and response will be evaluted. Given the low incidence of primary bone lymphoma (PBL), particularly for indolent variants, precise guidelines for the optimal management of this rare condition are still lacking. As a result, treatment is often tailored to the specific presentation characteristics of the disease Keywords: PBL; DLBCL; lymphoma; follicular lymphoma

USE OF INTRAPROSTATIC CALCIFICATION FOR PSOITION MATCHING IN IGRT PROSTATE

By Dr. ALINA QADEER BAIG

Background: The precise localization of the target in prostate External Beam Radiation Therapy (EBRT) is challenged by inter-fractional organ movement. Although the traditional standard is the use of bony anatomy matching on KV imaging and soft tissue matching on CBCT, the prostate gland independently moves in relation to the pelvic girdle due to varying rectal and bladder fill. Gold fiducial markers, although the gold standard, have the drawback of logistical hurdle. Methodology: A retrospective study design with 338 CBCT fractions from 19 patients. An offline multi-observer technique was used, in which observer used an independent registration technique based on the presence of intraprostatic calcifications. The obtained registrations were then adjudicated by a senior consultant who also verified the online matching. The difference in the 3D vector was then computed between the two registration used in this study which was then set at a threshold of ≤3 mm to define surrogacy. Result: The assessment showed that the average three-dimensional vector discrepancy for the entire fractions was well below the specified clinical limit of 3 mm ($p < 0.001$). Conclusion: intraprostatic calcifications can be a surrogate for soft tissue positioning to validate a non-invasive, highly reproducible image-guided protocol that optimizes target coverage.

It's not just the tumor biology, baseline nutritional status as a predictor of pCR in Esophageal cancer patients undergoing preoperative CRT

By Dr. MAROONA SYED

It's not just the tumor biology, baseline nutritional status as a predictor of pCR in Esophageal cancer patients undergoing preoperative CRT Background Neoadjuvant chemoradiotherapy followed by surgery, as established by the CROSS protocol, represents a standard treatment for locally advanced esophageal cancer. Pathological complete response (pCR) is a strong prognostic indicator; however, predictors of pCR remain poorly defined. Current international guidelines recommend routine nutritional assessment in esophageal cancer due to the high prevalence of cancer-related weight loss, yet its impact on tumor response to therapy remains insufficiently explored. This study evaluated baseline nutritional status as a potential surrogate marker of pathological response. Methods: We conducted a retrospective cohort study of 49 patients with cT3 T4, No N+ esophageal cancer, treated with neoadjuvant chemoradiotherapy according to the CROSS protocol followed by surgical resection. Baseline nutritional parameters including body mass index (BMI), percentage pre-treatment weight loss and serum albumin levels were analyzed alongside clinical variables such as ECOG performance status, histology and treatment-related toxicity. Twenty-nine patients underwent prophylactic feeding jejunostomy prior to treatment. Pathological response was assessed in surgical specimens, with pCR defined as absence of viable tumor. Results: Patients with preserved baseline nutritional status demonstrated higher rates of pCR compared with nutritionally compromised patients. While patients without feeding jejunostomy experienced greater treatment-related toxicity and decline in nutritional reserves during chemoradiotherapy, this did not translate into inferior pathological response. Better baseline nutritional profiles were also associated with improved treatment tolerance and completion of planned therapy. Conclusion: Baseline nutritional status may represent an underrecognized surrogate marker of tumor response in patients undergoing CROSS-based therapy. These findings suggest that pre-treatment nutritional reserve, rather than nutritional decline during therapy, may play a more important role in determining pathological response to neoadjuvant chemoradiotherapy.

From Unresectable to Resectable: Efficacy of Tailored Induction Chemotherapy Regimens in Locally Advanced Oral Cavity Carcinoma

By Dr. DR MAROONA SYED

Background: Head and neck malignancies, particularly oral cavity carcinoma, represent a significant oncological challenge in our regional population, frequently presenting at locally advanced stages with inherently aggressive tumor biology. Epidemiological data specific to this population remain limited, and the comparative therapeutic efficacy of differing induction chemotherapy (ICT) regimens in this context has not been well characterized. ICT offers a potential mechanism for primary tumor downsizing, thereby converting previously unresectable disease to a surgically amenable state and, by extension, may confer a meaningful survival benefit. Objective: To evaluate the clinical efficacy of different induction chemotherapy regimens in the management of locally advanced oral cavity carcinoma, with particular emphasis on tumor response rates, surgical resectability and overall survival outcomes. Methods: This study enrolled 66 patients with histologically confirmed locally advanced oral cavity carcinoma. ICT regimens were individualized according to patient performance status. Those with poor performance or advanced age received single-agent methotrexate, while fit patients were administered combination of platinum drugs (cisplatin/ carboplatin), taxanes (docetaxel or paclitaxel) or gemicitabine. Objective tumor response across regimens was systematically evaluated following four cycles of chemotherapy utilizing magnetic resonance imaging (MRI) and complementary radiological modalities in accordance with established response assessment criteria, including complete response (CR), partial response (PR), stable disease (SD), and progressive disease (PD). Results: Analysis revealed differential response rates across ICT regimens. Combination regimens, particularly docetaxel-cisplatin and paclitaxel-based protocols, demonstrated superior tumor downsizing compared to single-agent methotrexate, achieving higher rates of partial and complete radiological response. This facilitated surgical resection in a significant proportion of patients initially classified as unresectable. Single-agent methotrexate, while associated with a more modest response profile, remained a clinically meaningful option in patients with compromised performance status for whom aggressive combination chemotherapy was not feasible. A subset of patients across all regimens demonstrated minimal or no measurable response, identifying a subgroup with inherently refractory disease. Overall, ICT-driven tumor downsizing translated into improved surgical operability, with potential implications for long-term survival. Conclusion: Induction chemotherapy demonstrates meaningful and regimen-dependent oncological activity in locally advanced oral cavity carcinoma. Combination regimens offer superior tumor response and resectability rates in fit patients, while performance status–tailored regimen selection ensures treatment feasibility across a broader patient population. These findings highlight the importance of individualized ICT strategies in optimizing surgical and survival outcomes. Prospective, multi-institutional studies are warranted to further validate these findings, establish standardized protocols and define the precise survival impact of each regimen in this challenging patient cohort.

Evaluation of Palliative Radiotherapy for Pain Control in Hepatobiliary Malignancies

By Dr. IQRA IJAZ

Background: Pain in advanced hepatobiliary malignancies, caused by tumor-induced stretching of Glisson's capsule and mass effect, often resists systemic analgesia. Radiotherapy (RT) provides targeted relief. This study prospectively evaluates RT efficacy for symptom control. To evaluate pain

response, functional improvement, and safety of palliative RT in unresectable hepatobiliary tumors. Methodology: This prospective study analyzed 110 patients. Baseline pain (NRS) and performance status (ECOG) were recorded. RT was delivered via VMAT using 8Gy/1fx, 20Gy/5fx, 37.5–40Gy/15fx, or adjusted schedules (21Gy/7fx; 30Gy/10fx). Follow-up occurred 4–6 weeks post-RT; toxicities were graded by CTCAE v5.0. Results: Overall pain response was 78.2% (n=86). Subset rates were: 40Gy/15fx (83.3%), adjusted schedules (80.0%), 20Gy/5fx (76.7%), and 8Gy/1fx (76.1%). Pairwise comparisons showed no significant differences between adjusted and other cohorts (p=1.000) or 8Gy/1fx and 40/15fx (p=0.554). Mean NRS scores significantly decreased (7.5 to 3.1, p<0.001). Only Grade 1 (29.1%) and Grade 2 (9.1%) toxicities occurred; no Grade ≥3 events were reported. Conclusion: Palliative RT is effective and safe for hepatobiliary pain management. Statistical equivalence across schedules suggests that a single 8Gy fraction is an efficient alternative for significant palliation. By tailoring doses to performance status, RT reliably improves quality of life in advanced hepatobiliary disease.

Survival and Recurrence Trends in Cervical Cancer Treated with NACT and Concurrent Chemoradiotherapy: A Retrospective Institutional Analysis

By Dr. Dr Maroona Syed

Background Cervical cancer ranks as the fourth most common malignancy affecting women globally, with a disproportionately higher burden in low- and middle-income countries where it continues to drive significant cancer-related morbidity and mortality. In Pakistan, the incidence of cervical cancer is on the rise due to limited availability and utility of HPV vaccination, yet institutional data characterizing disease patterns and treatment outcomes remain sparse. Methods We conducted a retrospective observational study of patients diagnosed with cervical cancer and treated at the Department of Radiation Oncology, a tertiary care hospital in Rawalpindi, between August 2021 and August 2024. Data were systematically extracted from hospital records, encompassing demographic profiles, disease stage at presentation, treatment regimens administered and follow-up outcomes. Patients received NACT with carboplatin and paclitaxel followed by CCRT with weekly cisplatin. External beam radiotherapy (EBRT) was delivered at a dose of 4500 cGy in 25 fractions to primary, 5500cGy to involved pelvic nodes and 5750cGy to paraaorticc lymph nodes, followed by a vaginal brachytherapy boost of 800 cGy per fraction for three to four fractions. Patients were followed regularly over a three-year period. The endpoints were 3 year overall survival & recurrence patterns. Data were compiled, tabulated and analyzed using descriptive statistics. Results: A total of 68 patients with cervical cancer were included in the analysis. The mean age at presentation was 54 years. Squamous cell carcinoma accounted for 90% of cases. The majority of patients (39%) presented with stage IIIC disease. OS at 3 years was 80%, with 23 recurrences, of which 16 were distant and 7 locoregional. Conclusions: Despite late presentation of disease and limited availability of HPV vaccination in a resource constraint setup, result comparable to international trends. However, distant recurrence a major concern calling for a need of more effective systemic therapies for locally advanced cervical cancer in resource-constrained settings.

EFFICACY OF PROPHYLACTIC ROSUVASTATIN IN PREVENTING NILOTINIB-INDUCED DYSLIPIDEMIA AND REDUCING CARDIOVASCULAR RISK IN PATIENTS WITH CHRONIC PHASE CML.

By Dr. TAHREEM ZAHRA

Background: Nilotinib, a second-generation tyrosine kinase inhibitor for chronic phase chronic myeloid leukemia (CML), is associated with metabolic adverse effects, particularly dyslipidemia, which can increase cardiovascular risk. Early preventive interventions, such as statin therapy, may help mitigate these

complications. Methodology: This is a prospective, ongoing study including patients with chronic phase CML initiating nilotinib therapy. Participants receive prophylactic rosuvastatin, and lipid profiles including total cholesterol, LDL, HDL, and triglycerides are monitored at baseline and periodically during follow-up. Cardiovascular risk parameters are also assessed. Results: Preliminary observations suggest that early use of rosuvastatin may prevent significant elevations in lipid levels and help control dyslipidemia during nilotinib therapy. Data collection and patient follow-up are ongoing to further confirm these findings. Conclusion: Prophylactic rosuvastatin shows potential in reducing nilotinib-induced dyslipidemia and associated cardiovascular risk in chronic phase CML patients. Final results will provide more stronger evidence to guide preventive lipid-lowering strategies in this population.

SILENT SHADOWS: UNRAVELING RADIOTHERAPY-INDUCED CARDIOTOXICITY IN BREAST CANCER

By Dr. ASRA SAEED

Objective: To synthesize contemporary evidence on radiotherapy-associated cardiotoxicity in breast cancer, focusing on dose–response relationships, cardiac substructure sensitivity, heart-sparing techniques, and early detection strategies to balance oncologic benefit with cardiovascular risk. Methodology: A literature search (January 2015–September 2025) was conducted using the Cochrane Library, PubMed Central, and Google Scholar. Studies of breast cancer patients receiving adjuvant radiotherapy to the breast or chest wall, with or without regional nodal irradiation, reporting cardiac outcomes were included. Over 250 records were identified; after screening and duplicate removal, 31 studies were analyzed. Evidence from randomized trials, meta-analyses, dosimetric studies, and prospective imaging investigations was synthesized across four domains: epidemiology and risk magnitude, dose–response relationships and cardiac substructure dosimetry, impact of modern radiotherapy techniques, and early cardiac injury detection. Results: A consistent linear relationship between mean heart dose and major coronary events was observed, with excess risk of approximately 7.4% per Gy. Radiotherapy increased 10-year cardiovascular event risk by 6.4%, with excess relative cardiac mortality risk of 0.04 per Gy. Left-sided radiotherapy increased coronary heart disease (RR 1.29) and cardiac death (RR 1.22). The left anterior descending artery and left ventricle predicted ischemic risk more accurately than whole-heart dose. Deep inspiration breath-hold reduced LAD maximum and mean doses by 31.7% and 28.1% versus free-breathing ($p \leq 0.001$). VMAT maintained target coverage with lower cardiac dose than 3D-CRT. Radiotherapy confers a 4–5% survival benefit but increases cardiovascular mortality by 0.2–0.3%. Conclusion: Radiotherapy-associated cardiotoxicity remains an important survivorship issue. Standardized cardiac dose constraints, heart-sparing strategies, and early surveillance are essential, while integration of cardio-oncology may improve risk stratification and cardioprotection.

HOW DO ONCOLOGISTS GLOBALLY DEFINE OLIGOMETASTATIC DISEASE? A CROSS-SECTIONAL SURVEY STUDY

By Dr. ASRA SAEED

Objective: To evaluate how oncologists worldwide define oligometastatic disease (OMD) and identify variations in diagnostic criteria, lesion thresholds, and treatment intent. Methodology: A cross-sectional anonymous online survey was distributed to practicing oncologists globally. The questionnaire assessed definitions of OMD, classification by timing, imaging preferences, interpretation of case-based scenarios, and management strategies. Data were summarized as frequencies and percentages and analyzed using descriptive statistics. Results: This ongoing pilot study (N=31) includes respondents from institutions worldwide. The questionnaire was created using Google Forms and distributed through social media platforms. Most respondents were Radiation Oncologists, 29% were Medical Oncologists, and the .

remainder were surgical and clinical oncologists. Access to stereotactic radiotherapy was reported by 19 (61.3%) clinicians. OMD was defined as 1–5 lesions by 17 (54.8%), whereas others defined it as 1–3 lesions or had no fixed cutoff. Non-regional lymph nodes were included in the OMD definition by 22 respondents. PET-CT was preferred by 19 (61.3%) participants, CT by 4 (12.9%), while others selected site-dependent imaging. In the NSCLC scenario, 25 (80.6%) classified disease as oligometastatic and 5 (16.1%) as polymetastatic; 28 (90.3%) favored MDT with ablative intent. In the prostate scenario, 24 (77.4%) identified oligoprogression and 29 (93.5%) recommended SBRT. Clinician specialty correlated with inclusion of non-regional nodes (p=0.023) and MDT use (p=0.041). Conclusion: Significant heterogeneity exists in defining and managing OMD. These findings highlight the need for global consensus and standardized evidence-based criteria to guide clinical practice and future research

THE CORRELATION BETWEEN PATHOLOGICAL PARAMETERS WITH LYMPH NODE METASTASIS IN ORAL CAVITY SQUAMOUS CELL CARCINOMA (OCSCC)

By Dr. ASRA SAEED

Objective: To evaluate how oncologists worldwide define oligometastatic disease (OMD) and identify variations in diagnostic criteria, lesion thresholds, and treatment intent. Methodology: A cross-sectional anonymous online survey was distributed to practicing oncologists globally. The questionnaire assessed definitions of OMD, classification by timing, imaging preferences, interpretation of case-based scenarios, and management strategies. Data were summarized as frequencies and percentages and analyzed using descriptive statistics. Results: This ongoing pilot study (N=31) includes respondents from institutions worldwide. The questionnaire was created using Google Forms and distributed through social media platforms. Most respondents were Radiation Oncologists, 29% were Medical Oncologists, and the remainder were surgical and clinical oncologists. .

Access to stereotactic radiotherapy was reported by 19 (61.3%) clinicians. OMD was defined as 1–5 lesions by 17 (54.8%), whereas others defined it as 1–3 lesions or had no fixed cutoff. Non-regional lymph nodes were included in the OMD definition by 22 respondents. PET-CT was preferred by 19 (61.3%) participants, CT by 4 (12.9%), while others selected site-dependent imaging. In the NSCLC scenario, 25 (80.6%) classified disease as oligometastatic and 5 (16.1%) as polymetastatic; 28 (90.3%) favored MDT with ablative intent. In the prostate scenario, 24 (77.4%) identified oligoprogression and 29 (93.5%) recommended SBRT. Clinician specialty correlated with inclusion of non-regional nodes (p=0.023) and MDT use (p=0.041). Conclusion: Significant heterogeneity exists in defining and managing OMD. These findings highlight the need for global consensus and standardized evidence-based criteria to guide clinical practice and future research

LEFT SINONASAL ADENOID CYSTIC CARCINOMA WITH PULMONARY METASTASIS IN A YOUNG FEMALE: A CASE REPORT

By Dr.MUHAMMAD ASAD

Abstract: Adenoid cystic carcinoma (ACC) is a rare malignant tumor of salivary glands with indolent local growth, tendency for perineural invasion and distant metastasis. Treatment is surgery with negative margins followed by local control of disease by radiotherapy. Here we present a case of adenoid cystic carcinoma of left nasal cavity which eventually metastasized to the lungs despite initial treatment success.

Title: Primary Giant Cell Tumor of Lung, a rare case report

By Dr. Fatima Mahmood

Background Giant cell tumor (GCT) is a benign but locally aggressive neoplasm that typically arises in the epiphyses of long bones in young adults. Primary giant cell tumor of the lung (PGCTL) is exceedingly rare, with very few cases reported. Diagnosis relies on

histopathology and confirmation with H3G34W immunohistochemistry, which is highly specific for GCT. Case Description A 24-year-old non-smoking female presented with a two-month history of progressive dyspnea, cough, and posterior chest pain. Contrast-enhanced CT revealed a large posterior mediastinal mass (11.6 × 11.4 × 12 cm) invading the D6–D7 vertebral bodies with mild spinal canal compression. Core biopsy showed mononuclear stromal cells with numerous osteoclast-type multinucleated giant cells. Immunohistochemistry was positive for H3G34W and negative for cytokeratin (CKAE1/AE3), confirming primary pulmonary GCT. No distant metastases were identified. Due to vertebral and neurovascular involvement, the tumor was deemed unresectable. Discussion PGCTL is a rare diagnostic entity that may mimic other thoracic malignancies. H3G34W staining plays a crucial role in distinguishing it from giant cell–rich sarcomas and other mimics. Surgical resection is preferred when feasible; however, unresectable cases require a multidisciplinary approach. Conclusion Primary pulmonary GCT is rare and diagnostically challenging. Immunohistochemistry is essential for accurate diagnosis, and management remains complex in unresectable disease.

COMPARATIVE EFFICACY AND SAFETY OF PEMBROLIZUMAB VERSUS IPILIMUMAB IN ADVANCED MELANOMA: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALSIs

By Dr. INBSAAT

Background Immune checkpoint inhibitors have transformed advanced melanoma treatment, yet optimal first-line therapy remains debated. This meta-analysis compares pembrolizumab (anti-PD-1) versus ipilimumab (anti-CTLA-4) across efficacy and safety endpoints to guide clinical decision-making. Methods We systematically searched PubMed, Embase, Cochrane, and ClinicalTrials.gov through June 2025. Dichotomous outcomes were pooled as risk ratios (RR) and continuous outcomes as mean differences (MD) with corresponding 95% CIs using random-effects models in RevMan 5.4. Heterogeneity was assessed using I^2 and χ^2 statistics. A p-value of <0.05 was considered statistically significant Results Five randomized controlled trials involving 4303 patients (2835 pembrolizumab vs. 1468 ipilimumab) had median age 53-63 years, 40% female, predominantly stage IIIC/IV disease (66-82%), with 35-39% BRAF mutations, 32-35% elevated LDH, and 9-20% brain metastases were included. Pembrolizumab significantly improved overall survival versus ipilimumab (MD=11.70 months; 95% CI:[2.85–20.55]; p=0.01), with greater benefits at 5 years (MD=7.70 months; p=0.04) and 10 years (MD=16.80 months; p=0.0006). Overall survival rate was higher with pembrolizumab (RR=1.28; 95% CI:[1.05 1.56]; p=0.01), particularly at longer follow-up. Progression-free survival was prolonged (MD=3.53 months; 95% CI:[1.56–5.51]; p=0.0004). Pembrolizumab achieved higher clinical remission (RR=2.78; p<0.0001) and partial response rates (RR=2.77; p < 0.00001). Treatment discontinuation due to adverse events was lower with pembrolizumab (RR=0.35; p=0.0009). Overall adverse event rates were similar (RR=1.04; p=0.31), though time-stratified analyses indicated lower early AE risk but slightly higher rates with extended follow-up. Conclusions Pembrolizumab demonstrated superior survival and response outcomes versus ipilimumab in advanced melanoma, with a favorable early safety profile. Limitations include heterogeneity in follow-up durations and lack of biomarker-stratified analyses. Future studies should evaluate long-term toxicity and combinatorial strategies in biomarker-defined subgroups

Multimodality Treatment of Rare Sinonasal Teratocarcinosarcoma with Induction Chemotherapy and Chemoradiation: A Case Report

By Dr. YUSRA DILBER

Introduction Sinonasal teratocarcinosarcoma (SNTCS) is a rare and highly aggressive malignant

tumor of the nasal cavity and paranasal sinuses characterized by a heterogeneous composition of epithelial, neuroepithelial, and mesenchymal elements. Due to its rarity and rapid progression, optimal management strategies remain challenging.Case Report . We report the case of a 43-year-old male who presented with right-sided headache and recurrent epistaxis for one month. Clinical examination revealed a polypoid mass in the right nasal cavity with deviation of the nasal septum. Histopathological evaluation showed primitive neuroepithelial elements, atypical squamous nests, and spindle cells with myxoid change. Immunohistochemistry showed loss of SMARCA4 expression, with synaptophysin positivity in the neuroepithelial component and p63 positivity in the squamous component, confirming the diagnosis of SNTCS. CT imaging revealed a heterogeneously enhancing mass centered in the right nasal cavity and ethmoid sinus with extension into the maxillary and sphenoid sinuses without intracranial involvement. The patient received three cycles of induction chemotherapy with cisplatin and docetaxel, followed by radical concurrent chemoradiotherapy using IMRT (66 Gy in 33 fractions) with concurrent cisplatin. Follow-up imaging demonstrated significant tumor regression. Conclusion: This case highlights the potential benefit of multimodality treatment (chemotherapy and radiotherapy) in achieving favorable disease control in selected patients.

Sarcomatoid Carcinoma Of Cervix, an Aggressive and Rare Entity in a 65 years old woman

By Dr. DR SYED TURAB MEHDI

Background: Less than 40 instances of sarcomatoid carcinoma of the cervix have been recorded globally, making it an extremely rare and aggressive variation that accounts for less than 1% of cervical cancers [1-3]. Although the spindle cells are of epithelial origin, it has a biphasic appearance with both epithelial and spindle cell components [4,5].We are presenting here a case of 65 years old female with sarcomatoid carcinoma of the cervix Case Description: A 65-year-old postmenopausal lady complaining of vaginal bleeding for 12 months and lower abdominal pain for 11 months presented in outpatient department of cancer center Nishtar Hospital Multan . She had previously undergone a bilateral salpingo-oophorectomy and hysterectomy 2 months back . A 10x6 cm friable cervical tumour with bilateral parametrial invasion (FIGO stage IIIB) was discovered during examination. Pleomorphic spindle cells (mitotic count 5/10 HPF) were seen in the histopathology. Poorly differentiated sarcomatoid cancer was confirmed by immunohistochemistry, which showed positive results for pancytokeratin and negative results for CEA, CDX2, CK7, SOX10, desmin, S100, and HMB45 [3,7,10]. She underwent final concurrent chemoradiotherapy (50 Gy EBRT + brachytherapy) with decrese in the tumor burden. Discussion: In order to rule out melanoma and genuine sarcomas, the diagnosis necessitates comprehensive immunohistochemistry [3,4,7]. Advanced-stage illness has a poor prognosis and a significant probability of early recurrence despite early therapeutic response [1,6,8]. Although there is still little proof, emerging immunotherapy shows promise [10]. Conclusion : Increased clinical awareness is necessary for this uncommon aggressive tumour. Although the long-term prognosis is uncertain, multimodal therapy provides short-term benefits. Case reporting is still necessary [1,2,3,5].

Primary Intracranial Sclerosing Epithelioid Fibrosarcoma Mimicking Oligodendroglioma: A Rare Case Report

By Dr. IFRA SHAHID

Background: Sclerosing epithelioid fibrosarcoma (SEF) is a rare, aggressive variant of fibrosarcoma that usually arises in the deep soft tissues of the extremities or trunk. Primary intracranial SEF is exceedingly uncommon and may radiologically mimic more common dural or glial tumors, leading to diagnostic delay. Case Presentation: A 35-year-old previously healthy male presented with the sudden

onset of severe headache and recurrent vomiting. CT of the brain revealed a space-occupying lesion, and contrast-enhanced MRI initially suggested oligodendroglioma. The patient underwent craniotomy and tumor excision. Postoperatively, he developed motor aphasia and right-sided hemiplegia, which gradually resolved except for persistent motor aphasia. Histopathology showed a neoplastic lesion composed of sheets and perivascular arrangements of polygonal cells with moderate eosinophilic cytoplasm and focal necrosis. Immunohistochemistry demonstrated GFAP, Olig2, S100, and PR negativity with EMA positivity and a Ki-67 index of 10–15%. Further immunohistochemical evaluation showed diffuse MUC4 and vimentin positivity with negative TLE-1 and CD34, supporting the diagnosis of sclerosing epithelioid fibrosarcoma (SEF). CT scans of the chest, abdomen, and pelvis revealed no primary tumor elsewhere, confirming a primary intracranial lesion. The patient received adjuvant radiotherapy (60 Gy in 30 fractions). Follow-up MRI performed two months later showed no residual disease, and the patient remains clinically well with persistent motor aphasia but no motor deficits. Discussion: The diagnosis in this case was challenging because of overlapping radiologic and immunophenotypic features with several intracranial tumors, including oligodendroglioma, meningioma, synovial sarcoma, and metastatic carcinoma. Recognition of the characteristic epithelioid morphology within a hyalinized stroma and the use of an extended immunohistochemical panel were essential in establishing the diagnosis. In particular, strong diffuse MUC4 positivity, along with the absence of lineage-specific markers, supported the diagnosis of SEF and helped exclude other differential diagnoses. Conclusion: Primary intracranial SEF is an exceptionally rare entity that can mimic more common intracranial tumors. Accurate diagnosis requires careful histopathologic evaluation with extended immunohistochemistry to guide appropriate management.

ULTRA-HYPOFRACTIONATION DOSE STATISTICS WITH 3D CONFORMAL IN BREAST CANCER PATIENTS AT HIGH TURNOVER SETUP IN PUNJAB

By DR. DR. SUMAN KHAN

Background The FAST-FORWARD (2020) trial established a shorter course of radiotherapy with outcomes that are not inferior to the conventional treatment fractionation. Nishtar Hospital in Multan faces a significant patient load, and so implementing a shorter radiation regimen with equivalent clinical effectiveness could better address patient requirements. The researchers chose to broaden the clinical evidence by including patients from both early and late-stage breast cancer to ensure a more accurate representation of the local population. They examined the differences in dose characteristics of organs at risk, specifically the heart and lungs, in patients with left-sided breast cancer who underwent breast conservation surgery compared to those who had a modified radical mastectomy. Material and Methods Data was collected from the Eclipse (v13) Treatment Planning System at Nishtar Oncology Department in Multan, Pakistan and analyzed using SPSS v20. Results The researchers found that OAR dose constraints were successfully met with a reasonable conformity index, using 26Gy in 5 fractions; in both early-stage and locally advanced left-sided breast tumors. Conclusion Ultra-hypofractionation on 3D conformal therapy can be effectively used to treat breast tumor patients while meeting necessary dose constraints in a radiotherapy center with high patient volume. This approach offers both administrative advantages and reduces financial toxicity for patients.

Pathologic Complete Response as a Surrogate for Survival in HER2+ Non-Metastatic Breast Cancer: A Real-World Study from Pakistan.

By Dr. Muhammad Umer Khayyam Azam

Abstract Background: While clinical trials show that adding Pertuzumab to neoadjuvant Trastuzumab and chemotherapy improves pathological complete response (pCR) rates in HER2-positive non-metastatic breast cancer, real-world data comparing these two regimens is limited. Furthermore, there is insufficient evidence on whether the type of neoadjuvant therapy (single agent vs. dual blockade) impacts long-term outcomes in the adjuvant setting. This study aims to evaluate the impact of single versus dual HER2-targeted therapy on pathological complete response (pCR) and to assess event-free survival (EFS) outcomes in patients with residual disease compared to those achieving pCR. Methods: We retrospectively collected data for 245 Her 2 positive Non-Metastatic Breast Cancer (NMBC) patients who received neoadjuvant HER2-targeted therapy plus chemotherapy between January 2018 and December 2023 at our institute. Patients were divided into three groups based on their HER2-targeted treatment: Trastuzumab recipients in both adjuvant and neoadjuvant settings (H:H), Pertuzumab plus Trastuzumab in neoadjuvant and Trastuzumab in adjuvant (PH:H), Pertuzumab plus Trastuzumab in both neoadjuvant and adjuvant settings (PH:PH). We used the Kaplan-Meier method to examine survival distribution differences within sub-categories, considering results significant at an alpha level of 0.05. SPSS 26 was used for descriptive and comparative data analysis.

Role of holistic treatment approach in the management of Metastatic HER2-Positivity

By Dr. Junaid Khan , Dr. Muhammad Ghufran

Introduction: HER2-positive breast carcinoma is an aggressive molecular subtype with a high metastatic potential. In patients with metastatic HER2-neu–positive disease, targeted anti-HER2 therapies have substantially improved survival. In addition, psychosocial barriers can have a significant impact on treatment adherence and, consequently, on clinical outcomes. Case presentation: We report the case of a 35-year-old woman initially diagnosed in November 2020 with Stage I right-sided invasive ductal carcinoma with high-grade ductal carcinoma in situ. The tumor was estrogen receptor–positive, progesterone receptor–negative, and HER2-negative. She underwent right mastectomy with sentinel lymph node biopsy and was started on adjuvant tamoxifen. Within one year, she developed aggressive disease progression with widespread osseous metastases. Repeat biopsy demonstrated a marked change in tumor biology, with loss of hormone receptor expression and conversion to HER2-neu positivity. The rapid transition from an apparently curable early-stage cancer to advanced metastatic disease had a profound psychological impact. Psychosocial challenges, including poor acceptance of the diagnosis, complex social circumstances, and lack of spousal support, resulted in inconsistent treatment adherence during the early metastatic phase. Subsequently, increased support from her extended family was associated with improved adherence, fewer treatment-related complications, and better quality of life. She received multiple lines of systemic therapy, including trastuzumab, paclitaxel, lapatinib, and capecitabine. Despite metastatic disease, she survived for more than four years. Conclusion: This case highlights the clinical significance of tumor receptor conversion and underscores the critical role of psychosocial support in influencing treatment adherence, quality of life, and outcomes in patients with metastatic breast cancer

POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME FOLLOWING INDUCTION CHEMOTHERAPY IN SQUAMOUS CELL CARCINOMA OF THE TOUNGUE : A CASE REPORT

By Dr. DR. SHEHZAD KHAN

Posterior reversible encephalopathy syndrome (PRES) is a rare yet potentially a very serious neurological complication associated with certain cytotoxic chemotherapy. PRES is a poorly understood Clinico-Radiological diagnosis. We report the case of a 58-years-old female with squamous cell carcinoma (SCC) of the tongue who developed PRES following the first cycle of cisplatin–gemcitabine induction chemotherapy (Cisp75Gem). She presented with acute seizures and altered consciousness. MRI brain demonstrated characteristic T2/FLAIR signal abnormalities without contrast enhancement, consistent with PRES. Prompt withdrawal of chemotherapy, initiation of antiepileptic therapy, and supportive management led to complete neurological recovery. Following multidisciplinary reassessment, chemotherapy was safely resumed with regimen modification. This case highlights the importance of early recognition of PRES in oncology patients and supports the reversibility of the condition with timely intervention.

DURABLE DISEASE CONTROL IN SINONASAL TERATOCARCINOSARCOMA TREATED WITH INDUCTION CHEMOTHERAPY FOLLOWED BY RADICAL CONCURRENT CHEMO RADIATION: A CASE REPORT

BY Dr. ASMAT ULLAH

Background: Sinonasal teratocarcinosarcoma (SNTCS) is an extremely rare and highly aggressive malignancy of the sinonasal tract characterized by marked histologic heterogeneity and poor prognosis. Due to its rarity, optimal treatment strategies remain poorly defined. Case Description/Methods: A 43-year-old male presented with headache and recurrent epistaxis. Imaging revealed a locally advanced mass involving the right nasal cavity and paranasal sinuses without intracranial extension. Histopathology demonstrated SNTCS with lass of SMARCA4 expression. The patient received induction chemotherapy with cisplatin and docetaxel followed by definitive concurrent chemoradiation using intensity-modulated radiotherapy (66 Gy in 33 fractions) with concurrent cisplatin. Results: Post-treatment imaging showed marked tumor regression. Serial follow-up imaging demonstrated continued response with a stable residual lesion. At two years post-treatment, the patient remains clinically stable with no eviderice of locoregional recurrence or distant metastasis, Conclusion: This case demonstrates the potential chemosensitivity and radiosensitivity of SNTCS and supports a multimodality treatment approach, including induction chemotherapy and radical chemoradiation, for achieving durable disease control in selected patients.

PRIMARY NUT CARCINONA OF THE SUBMANDIBULAR GLAND IN YOUNG MALE: AN UNUSUAL EXTRAMIDINE SITE

By DR. GULALAI YOUSAFZAI, DR. WAJJIHA GULZAR

Background NUT carcinoma (NC) is an ultra-rare, aggressive epithelial malignancy de ned by NUTM1 gene rearrangements. Typically midline-associated, primary submandibular gland involvement is exceptionally rare. Due to its undifferentiated morphology, NC is frequently misdiagnosed as squamous cell carcinoma. We report a rare case in a young male who remains disease-free 10 months post-therapy, emphasizing the role of early IHC and aggressive multimodality treatment. Rationale This case is signi cant due to the atypical "off-midline" location and the patient's favorable 10-month survival, which deviates from the reported median survival of 6.7 months. It highlights the diagnostic necessity head and neck masses. Methods of NUT1 testing in young patient with rapidly enlarging Evaluation included contrast-enhanced CT and PET-CT for staging. Diagnosis was established via

core needle biopsy. Tissue was processed with H&E staining and a comprehensive IHC panel. De nitive con rmation was achieved using NUT1 immunohistochemistry (clone C52B1), showing speckled nuclear positivity, and validated by FISH for NUTM1 rearrangement. Results: The patient underwent radical submandibular gland excision and ipsilateral neck dissection, followed by adjuvant chemoradiotherapy (66 Gy with concurrent Cisplatin). Follow-up imaging and clinical examination con rm the patient remains disease-free 10 months after treatment completion, with no evidence of local or distant recurrence. Conclusion: NUT carcinoma must be a differential for rapidly enlarging submandibular masses in young patients. Early molecular identi cation via NUT1-IHC and aggressive triple-modality therapy are critical to overcoming the typically dismal prognosis associated with this malignancy. Keywords: NUT Carcinoma, Submandibular Gland, NUTM1, Salivary gland Cancer, Young Adult.

Durable Disease Control with Temozolomide in Metastatic Cervical Paraganglioma: A Rare Case with Long-Term Follow-Up

By Dr. MALEEHA

Background: Paragangliomas (PGLs) are rare neuroendocrine tumors of extra-adrenal paraganglia. Malignancy is defined by metastases. Systemic therapy remains limited: Cyclophosphamide, Vincristine, Dacarbazine (CVD) is standard first line, while Temozolomide (TMZ) shows benefit, especially in SDHB-mutant tumors. Recently, targeted agents and pembrolizumab have been explored, though long-term TMZ outcomes are scarce. Case Presentation: A 65-year-old woman with non-functional cervical PGL and pulmonary metastases (2016) received CVD, achieving stabilization after 3 cycles but progression after 6. She was switched to TMZ (150 mg/m², later reduced to 200 mg for 5 days in a 4weekly regimen; adjusted for cytopenias). Over 8 years of continuous TMZ, she has maintained radiologic and clinical stability, with PET-CT in May 2025 confirming no progression. Treatment was well tolerated with manageable hematologic toxicity and no discontinuation. Discussion: This case highlights treatment sequencing in metastatic PGL. First-line therapy remains CVD; second-line options include TMZ, Radionuclide therapy (131 I-MIBG, 177 Lu-DOTATATE), TKIs (Sunitinib, Cabozantinib), and mTOR inhibitors. Pembrolizumab has shown activity in progressive disease. Durable disease control with TMZ in this patient underscores its value in the pre-immunotherapy era and in resource-limited settings where novel agents are inaccessible. Its tolerability and sustained benefit reinforce its relevance in metastatic PGL management. Conclusion: Temozolomide can achieve durable disease control in metastatic paraganglioma, as reflected by sustained stability for over eight years in this case. It remains a cost-effective, well-tolerated option when surgery, immunotherapy, or radionuclide therapy are not feasible.

IMPACT OF STRUCTURED PRE-SIMULATION COUNSELING ON PSYCHOLOGICAL OUTCOMES IN BREAST CANCER PATIENTS UNDERGOING RADIOTHERAPY: A PILOT STUDY

By Dr. MALEEHA

Background: Breast cancer patients commonly experience anxiety, depression, and stress prior to radiotherapy simulation, which may negatively affect treatment experience and adherence. Evidence supporting structured pre-simulation counseling in radiotherapy practice remains limited. Methods: A single-center prospective controlled pilot study was conducted, including 40 breast cancer patients scheduled for CT simulation. The intervention group (n=20) received structured pre-simulation counseling addressing procedural details and coping strategies, while the control group (n=20) received standard care without formal counseling. Psychological distress was assessed immediately

before and after simulation using the Depression, Anxiety, and Stress Scale (DASS-21). Paired t-tests were performed to evaluate within-group changes. Results: The intervention group demonstrated significant reductions in depression (-3.5, p=0.015), anxiety (-2.3, p=0.022), and stress (-5.8, p<0.001). The control group showed no statistically significant changes in any domain (p>0.05). Patient satisfaction with counseling was uniformly high. Conclusion: Structured pre-simulation counseling significantly reduces psychological distress and represents a feasible, low-cost strategy to improve patient experience in radiotherapy settings.

DOSE PARAMETERS AND TOXICITY IN PATIENTS TREATED WITH SIMULTANEOUS INTEGRATED BOOST (SIB) IN NODE-POSITIVE CERVICAL CANCER: A PROSPECTIVE STUDY

By Dr. ABDUL SUBHAN ZAHID

Title: Dose Parameters and Toxicity in Patients Treated with Simultaneous Integrated Boost (SIB) in Node-Positive Cervical Cancer: A Prospective Study Background: Cervical cancer remains a major global health burden, with nodal involvement representing an important adverse prognostic factor. The 2018 FIGO staging system introduced stage IIIC to denote nodal disease. While concurrent chemoradiotherapy with external beam radiotherapy (EBRT) and brachytherapy remains the standard of care for locally advanced cervical cancer, achieving optimal control of involved lymph nodes without exceeding organ-at-risk (OAR) tolerance remains challenging. Advances in radiotherapy techniques, particularly volumetric modulated arc therapy (VMAT) with simultaneous integrated boost (SIB), allow dose escalation to involved lymph nodes while maintaining acceptable OAR doses. However, prospective data evaluating toxicity and nodal control with this approach remain limited. Methods: This prospective observational study will be conducted at the Department of Clinical and Radiation Oncology, Shaukat Khanum Memorial Cancer Hospital and Research Centre, Lahore. Thirty-two patients with histologically confirmed FIGO 2018 stage IIIC cervical cancer with radiologically involved pelvic or para-aortic lymph nodes will be enrolled. All patients will receive VMAT-based EBRT delivering 45 Gy in 25 fractions with SIB to involved nodes up to 55–57.5 Gy, concurrent weekly cisplatin (40 mg/m²), followed by high-dose-rate brachytherapy (28 Gy in four fractions). Toxicities will be graded using CTCAE v5.0. Dose-volume parameters and toxicity rates will be analyzed descriptively. Conclusion: This study aims to evaluate treatment-related toxicity and early nodal control in patients with node-positive cervical cancer treated with VMAT-based SIB, providing prospective data on the safety and feasibility of this dose-escalation strategy.

EFFICACY AND SAFETY OF STEREOTACTIC BODY RADIOTHERAPY IN HEPATOCELLULAR CARCINOMA: A SYSTEMATIC REVIEW AND META-ANALYSIS

By Dr. MUHAMMAD AIZAZ UR REHMAN

Background/Objective: Hepatocellular carcinoma (HCC) is a leading cause of cancer mortality, with current treatments like hepatectomy, transarterial chemoembolization, and radiofrequency ablation facing significant limitations. Stereotactic body radiotherapy (SBRT) has emerged as a noninvasive alternative for ineligible patients. Methods: This meta-analysis searched PubMed, Embase, and Cochrane Library through February 2026, comparing SBRT against non-SBRT modalities. Primary outcome was progression-free survival; secondary outcomes included overall survival, local control rates, and Grade ≥3 toxicity, analyzed using random-effects models. Results: 26 studies involving 10,382 HCC patients were included. Pooled hazard ratio analysis demonstrated improved progression-free survival (HR=0.62, 95%CI 0.45–0.85, p=0.003; I^2=0%) and local control (HR=0.26, 95%CI 0.14–0.49, p<0.0001) in the SBRT group. Separate timepoint analyses using risk

ratios showed no significant differences in overall survival at 1 year (RR=0.99, 95%CI 0.96–1.03, p=0.70; I^2=47%), 3 years (RR=0.97, 95%CI 0.91–1.05, p=0.46; I^2=74%), or 5 years (RR=0.89, 95%CI 0.69–1.14, p=0.35; I^2=91%). Grade ≥3 toxicity according to CTCAE showed no significant difference between the SBRT and control groups (RR=1.18, 95%CI 0.73–1.92, p=0.49; I^2=0%). Conclusion: SBRT is associated with improved progression-free survival and local control compared with non-SBRT modalities, representing a promising treatment option for HCC patients.

EFFORTS TO MINIMIZE GENERAL ANESTHESIA USE IN PEDIATRI RADIATION

By Dr. TOOBA ALI

Background Minimizing general anesthesia (GA) in pediatric radiation therapy (RT) is essential to reduce iatrogenic risks, resource demands, and treatment complexity. This study evaluates the impact of pre-simulation interventions on GA reduction. Methods: This retrospective study reviewed pediatric RT records from January 2023 to November 2024. GA use was defined as requiring intravenous or inhaled anesthetics during simulation. Interventions included pre-simulation orientation, audiovisual distractions (e.g., television during RT), two-way audio communication with caregivers, exposure therapy, and success reinforcement (e.g., small gifts). Demographics, diagnoses, and interventions were analyzed. Results: Data from 117 patients (65% male) showed most were treated for sarcomas (46%), renal tumors (21%), lymphomas (17%), and CNS tumors (11%). GA use was highest in children under 3 years (91%) and decreased with age: 58% in 4–6 years, 9% in 7–12 years, and none over 13 years. In the 4–6-year group, reinforcement with small toys or treats (52%) and audiovisual aids (32%) were the most effective strategies, while caregiver involvement, cartoon-themed simulation gadgets, and exposure therapy benefited 23%. For the 7–12-year group, pre-simulation orientation was most effective (53%), followed by success reinforcement (22%). These findings underscore the adaptability of 4–12-year-olds to GA reduction interventions. Conclusion: Age-specific pre-simulation interventions effectively reduce GA use in pediatric RT. Reinforcement strategies are beneficial for younger children, while older children respond well to orientation. Establishing a pre-simulation playroom is the next step in enhancing these efforts.

PROSPECTIVE EVALUATION OF DOSE-DEPENDENT MASTICATORY MUSCLE ATROPHY AND TRISMUS AFTER RADIOTHERAPY IN ORAL CAVITY CANCER

By Dr. MAHAM KHAN

Background: This study evaluated radiation dose–volume effects on masticatory muscles and their association with trismus severity and muscle atrophy in oral cavity squamous cell carcinoma (OSCC). Methods: In this prospective observational study, 30 patients undergoing adjuvant external beam radiotherapy for OSCC were included. Trismus was measured using maximal incisor distance (MID) at baseline and three months post-treatment. The masseter, medial and lateral pterygoid, and temporalis muscles were contoured on planning and follow-up CT scans to calculate volumetric changes. Mean radiation doses were derived from dose–volume histograms. Paired t-tests and Pearson's correlation analyses assessed relationships between radiation dose, muscle volume loss, and functional decline. Results: Mean MID significantly decreased from 2.18 cm pre-treatment to 1.96 cm post-treatment (p=0.000). Significant ipsilateral muscle atrophy was observed (p<0.001), greatest in the temporalis (mean loss 3.32 cm^3) and masseter (mean loss 2.49 cm^3). Higher radiation doses correlated with greater volume reduction in the ipsilateral masseter (r=0.511, p=0.004) and pterygoids (r=0.448, p=0.013). Worsening trismus was significantly associated with masseter and temporalis atrophy. Age >50 years and buccal mucosa primaries predicted severe trismus. Conclusion: Radiation-induced trismus is

dose-dependent and linked to ipsilateral masticatory muscle atrophy, underscoring the importance of dose optimization during treatment planning.

INTERFRACTIONAL UTERINE MOTION ANALYSIS AND IMPLICATIONS FOR ADAPTIVE RADIOTHERAPY IN CERVICAL CANCER

By Dr. MAHAM KHAN

Background: Uterine motion during external beam radiotherapy (EBRT) for cervical cancer can affect target coverage. Daily cone-beam computed tomography (CBCT) allows quantification of interfractional displacement and may aid adaptive treatment planning. Methodology: This prospective observational study included six cervical cancer patients treated with definitive EBRT with concurrent cisplatin followed by brachytherapy. Daily pre-treatment CBCT scans were registered to planning CT images. Maximum uterine displacements were measured in anterior–posterior (AP), superior–inferior (SI), and right–left (RL) directions. Results: A total of 150 CBCT scans were analyzed. Mean uterine displacement was greatest in the AP direction (0.96 ± 0.22 cm), followed by SI (0.92 ± 0.17 cm) and RL (0.90 ± 0.13 cm). Maximum observed shifts were 1.27 cm (AP), 1.30 cm (SI), and 1.19 cm (RL). Mean bladder volume was 330.75 ± 52.95 cm^3. AP motion showed a moderate, non-significant correlation with bladder volume ($r = 0.357$, $p \approx 0.08$). Increased motion variability was observed during mid-treatment fractions and was influenced by bladder and rectal filling, as well as patient factors such as age, body mass index, and parity. Conclusion: Uterine motion during cervical cancer EBRT is direction-dependent and patient-specific. Daily CBCT facilitates accurate motion assessment and supports anisotropic margin.

Clinical Outcomes and Symptom Control in Advanced Oral Cavity Carcinoma: Hypofractionated Palliative Radiotherapy Versus Definitive Concurrent

By Dr. Zainab Bashir

Clinical Outcomes and Symptom Control in Advanced Oral Cavity Carcinoma: Hypofractionated Palliative Radiotherapy Versus Definitive Concurrent Chemoradiotherapy Authors: Zainab Bashir, Hina Hashmi, Aisha Siddiqua, Raheela Mahmood Background: Locally advanced oral cavity carcinoma often presents with extensive disease where treatment intent may be either definitive or palliative depending on patient fitness and disease burden. While definitive concurrent chemoradiotherapy aims to achieve better disease control, hypofractionated palliative radiotherapy is frequently used to provide rapid symptom relief in patients unsuitable for prolonged treatment. This study aimed to compare clinical outcomes and symptom control between these two treatment approaches. Methods This retrospective study included patients with stage IVA–IVC oral cavity carcinoma treated between Year 2024-2025. Patients received either definitive radiotherapy (66 Gy in 33 fractions) with concurrent Cisplatin or hypofractionated palliative radiotherapy (46 Gy in 16 fractions). Tumor response was assessed 8–12 weeks after treatment according to RECIST Criteria, and symptomatic response was evaluated clinically. Results: A total of 68 patients (male: 52, female: 16; age range 30–75 years) were included in the analysis. All patients had advanced inoperable disease (25% stage IVA, 71% stage IVB, and 4% stage IVC). The most common presenting symptom was pain followed by bleeding and dysphagia. Planned radiotherapy without interruption was completed by 81% of patients. Approximately 60–70% of patients experienced appreciable relief in their presenting symptoms. Overall response evaluation demonstrated complete response in 7%, partial response in 63%, stable disease in 22%, and progressive disease in 8%. The objective response

rate (CR+PR) was higher in the definitive treatment group (75%) compared with the palliative radiotherapy group (64%), with complete response observed in 28% and 8% of patients respectively. Symptomatic improvement, particularly in pain and bleeding, was observed in approximately 65–70% of patients receiving palliative radiotherapy, while treatment completion was higher in the palliative group (89% vs 75%). Conclusion: Hypofractionated palliative radiotherapy provides effective symptom relief and acceptable tumor response in patients with advanced oral cavity carcinoma. Although definitive concurrent chemoradiotherapy achieves higher tumor response rates, shorter palliative schedules improve treatment compliance and represent a practical treatment option for patients with limited treatment tolerance.

Metastatic placental site trophoblastic tumor with aggressive behavior - A case report

By Dr. ZAINAB BATOOL

Background: Placental site trophoblastic tumor (PSTT), a rare gestational trophoblastic disease (0.25 - 5% of all trophoblastic tumors), is a neoplastic proliferation of intermediate trophoblasts at placental implantation site which mostly occurs in women of childbearing age. Case Description: We present a case of 49 years female who presented with complaint of abnormal vaginal discharge. MRI pelvis revealed 6*6cm suspicious uterine mass. Total abdominal hysterectomy with bilateral salpingo-oophorectomy was done which revealed 'placental site trophoblastic tumor'. Post-operatively beta-HCG level was progressively rising. CECT Chest and abdominopelvis revealed no residual disease but solitory indeterminate pulmonary nodule. 12 cycles of chemotherapy EMA/EP were administered. Initially, the level of Beta-HCG plummeted, however, it began to rise again. Post-chemotherapy CECT chest showed disease progression with multiple pulmonary metastasis. Discussion: PSTT is a rare gestational trophoblastic neoplasm that does not have a pathognomonic appearance; therefore, correlation . with medical history, f laboratory tests and pathological analysis is mandatory. Our case represents the aggressive chemoresistant variant of PSTT. Conclusion: Metastatic PSTT is a rare condition. Definitive diagnosis relies on histopathological evaluation. Elevated serum beta-HCG levels are commonly observed in patients with metastatic disease and serve as a useful biomarker for early detection and management

EXTRAMEDULLARY SOLITARY PLASMACYTOMA OF NASOPHARYNX: A CASE REPORT

By Dr. JANNAT ASIF

EXTRAMEDULLARY SOLITARY PLASMACYTOMA OF NASOPHARYNX: A CASE REPORT Authors: Jannat Asif, Anum Siddique, Umar Farooq Affiliation: Cancer Care Hospital and Research Centre Background: Extramedullary plasmacytoma constitutes about 3–5% of all plasma cell tumors. As nasopharynx is a rare site for these tumors, they can mimic nasopharyngeal carcinoma leading to diagnostic challenges. Considering it a diagnosis of exclusion, a comprehensive evaluation for multiple myeloma should be done. Case Description: A 49 years old male presented to (OPD) with complain of itching in throat for 2-3 months. His endoscopy showed polypoidal mass arising from right nasopharyngeal wall. Histopathology turned out to be 'Plasma cell tumor'. Beta 2 microglobulin was raised to 3141 ng/ml. CECT of face and neck documented 17 x 13 mm soft tissue mass arising from right nasopharyngeal wall. All other investigations were normal. Multidisciplinary team decided to proceed with definitive radiotherapy. Intensity modulated radiotherapy was planned with total dose of 50 Grays. Three months after radiotherapy, CECT head and neck showed complete response in nasopharynx along with multiple lytic lesions in parietal bones. Again, workup of multiple myeloma was negative. Patient is on close observation. Conclusion: This case highlights the importance of considering rare histologies in the

differentials. Plasmacytomas carry good prognosis but longer and close follow up is required as disease may relapse in the form of multiple myeloma.

Dosimetric comparison of fixed-configuration versus image-guided needle insertion in cervical brachytherapy

By Dr. MARYAM EJAZ

Purpose Image-guided needle insertion for cervical cancer brachytherapy can be logistically demanding in resource-limited settings. This study evaluated whether a fixed-configuration (FC) method yields comparable dosimetric outcomes and toxicity profiles to the standard of care (SOC) image-guided technique. Methods Patients (FIGO IB2-IVa) received EBRT followed by interstitial brachytherapy (28Gy/4 fractions) using the Utrecht applicator. The FC group had six lateral needles inserted at a 2cm depth without real-time guidance, while the SOC group utilized CT-guided insertion. Post-insertion planning CTs were performed for both. Dosimetric parameters for HRCTV D 90 and D2cc of organs at risk (OARs) were compared using the Mann-Whitney U test. Results Analysis of 181 fractions (46 patients) showed no significant differences in HRCTV (p=0.28), bladder (p=0.98), or rectum (p=0.37) doses. While per-fraction sigmoid doses were higher in the FC group (p=0.01), per-patient analysis revealed no significant dosimetric differences across any parameters, including the sigmoid (p=0.52). Crucially, no Grade 3–4 CTCAE toxicities were reported in either group. Conclusion The fixed-configuration method is a clinically feasible alternative. It provides comparable dosimetric coverage and safety to image-guided techniques, offering a practical solution to reduce healthcare burdens in resource-constrained environments.

Clinical outcomes in patients with locally advanced cervical cancer treated with neoadjuvant chemotherapy followed by concurrent chemoradiation and Brachytherapy Boost with hybrid applicators

By Dr.WASEEM RIZWAN

Objectives: To determine the clinical outcomes in patients with locally advanced cervical cancer (LACC) treated with neoadjuvant chemotherapy (NACT) followed by concurrent chemoradiation (CCRT) and high-dose-rate (HDR) Brachytherapy Boost with hybrid applicators. Study Design: Prospective observational Study Place and duration of study: This study was conducted at the Department of Radiation Oncology, CMH Rawalpindi from 06 Aug 2024 to 31 May 2025. Methodology: After ethical approval, 29 patients were enrolled with informed consent. They received NACT (weekly carboplatin AUC 2 and paclitaxel 80 mg/m² for 6 weeks), then CCRT from week 7 with EBRT (45 Gy/25 fractions), weekly cisplatin (40 mg/m²), and HDR brachytherapy (28 Gy/4 fractions). MRI was done post NACT and 12 weeks after treatment. Response was assessed via RECIST 1.1; toxicities graded per CTCAE 6.0. Patients were monitored weekly during treatment and monthly for six months post therapy. Results: Mean age was 52.03 ± 10.05 years, tumor size 4.20 ± 0.67 cm. Stages: IIIC (38.7%), IIIA (29.9%), IIB (17.6%), IVA (13.8%). Post NACT, 69% had partial response; at 3 months, 93.1% achieved complete response. Grade III/IV toxicities: neutropenia (17.2%), anemia (10.3%), nausea/vomiting (6.9%), diarrhea (3.4%), mucositis (6.9%). Late toxicities: proctitis (6.9%), vaginal stenosis (10.3%), cystitis (3.4%). Conclusion: NACT followed by CCRT and HDR brachytherapy boost using hybrid applicators is an effective treatment approach for LACC.

LINAC-Based Stereotactic Radiosurgery / Radiotherapy for Brain Lesions: Dosimetric Outcomes Without Dedicated SRS Hardware – A single institute observational study

By Dr.Shahzeb Jawed

Background Stereotactic Radiosurgery (SRS) and Stereotactic Radiotherapy (SRT) for intracranial lesions are conventionally delivered on dedicated platforms or specialized LINACs with flattening-filter-free (FFF) beams and 6-degrees-of-freedom (6DoF) couches — resources largely unavailable in low- and middle-income countries. We report dosimetric outcomes of LINAC-based SRS and SRT using a standard Varian Vital Beam without FFF or 6DoF capability at Combined Military Hospital Rawalpindi. Methods Fourteen patients with primary brain tumors or intracranial metastases received singlefraction SRS or hypofractionated SRT (3 or 5 fractions) on a Vital Beam LINAC via VMAT, with thermoplastic mask and 4DoF couch. Pre-treatment gadolinium-enhanced T1w MRI (≤1.5 mm) in treatment position was co-registered to planning CT. Online kV-CBCT verification with bony matching was performed before each fraction (tolerances: ≤1 mm, ≤1°; per AAPM TG-142/MPPG 9.a). Dosimetric parameters including TC, SI, PCI, GI, and V12Gy were compared against RTOG and international benchmarks. Local control at 1, 3, and 6 months was assessed with gadoliniumenhanced T1w MRI (≤1.5 mm) and MRS. Toxicity was assessed in followup OPD visits. Results Fourteen patients (metastases n=11, primary tumors n=3; median age 47.5 years, range 30–73) were treated: 7 with single-fraction SRS (median 18 Gy, range 14–20 Gy), 5 with 3-fraction SRT (median 24 Gy, range 21–27 Gy), and 2 with 5-fraction SRT (median 25 Gy); overall median dose 20.5 Gy (range 14–27 Gy). Mean TC was 0.97±0.02, SI 0.89±0.09 (benchmark ≥ 0.75), PCI 0.80±0.10 (mandatory ≥0.60; optimal ≥0.80), and GI 3.37±0.31 (mandatory <5.0). Mean V12Gy was 7.22 cc for SRS (<10 cc), 26.50 cc for 3fx SRT (<50 cc), and 5.91 cc for 5fx SRT (<30 cc); all within mandatory limits. Local control at 1, 3, and 6 months was 85.7%, 85.2%, and 86.2%, respectively. Grade ≥2 toxicity occurred in 2 patients (14.3%): one radiation necrosis and one headache with oedema, both managed conservatively. No treatment-related deaths were observed. Conclusion LINAC-based SRS and SRT without FFF beams or 6DoF couch achieves dosimetric outcomes within international mandatory benchmarks, supporting feasibility in resource-limited settings. With pre-treatment MRI co-registration, thermoplastic immobilization, and CBCT-guided verification, conventional LINACs are a viable and cost-effective alternative to dedicated SRS platforms in low- and middle-income countries.

TRANSFORMING ESOPHAGEAL CANCER CARE: THE PROMISE OF CONCURRENT CHEMORADIOTHERAPY

By Dr. ASMA SALEEM KHAN

Background: Esophageal cancer is an aggressive malignancy with poor prognosis. Definitive concurrent chemoradiotherapy (CCRT) has emerged as an organ-preserving treatment alternative to surgery in selected patients. This study evaluated treatment response following definitive CCRT and compared outcomes across histological subtypes. Methods: This prospective observational cohort study was conducted at Dr Ziauddin Hospital. Patients with biopsy-confirmed esophageal cancer who met the inclusion criteria and underwent definitive CCRT were included. Statistical analysis was performed using IBM SPSS Statistics. The primary outcome was overall treatment response. Associations between categorical variables—including PET response, biopsy response, tumor histology, and radiological stage—were evaluated using Fisher's exact test, with $p < 0.05$ considered statistically significant. Results: A total of 46 patients received definitive CCRT. Complete metabolic response on post-treatment PET-CT was observed in 23 patients (50%), with an overall metabolic response rate (CMR+PMR) of 82.6%. Tumor histology showed a significant association

with both metabolic and pathological response (p = 0.026). Pathological complete response on endoscopic biopsy occurred in 28 of 38 patients (73.7%) with squamous cell carcinoma, whereas all six patients with adenocarcinoma demonstrated residual disease. Among two patients with adenosquamous carcinoma, one achieved complete metabolic and histopathological response. Conclusion: Definitive CCRT demonstrates promising response rates in esophageal cancer, particularly in squamous cell carcinoma, supporting its role as a potential organ-preserving alternative to surgery in selected patients

Correlation of Radiological Findings with Clinical Outcomes in Pediatric Neutropenic Enterocolitis Authors: Dr. Soura Jawed, Dr. Hana Arbab Department: Paediatric Surgery, Indus Hospital & Health Network, Karachi Background: Neutropenic enterocolitis (NE) is a life-threatening gastrointestinal emergency in paediatric oncology patients receiving intensive chemotherapy and remains associated with significant morbidity and mortality. Data from low- and middle-income countries are limited. This study aimed to evaluate the correlation between radiological findings and clinical outcomes in paediatric patients with NE. Methods: A retrospective study was conducted at Indus Hospital & Health Network, Karachi (July 2018–August 2025). Paediatric oncology patients aged 1–15 years meeting NE criteria—neutropenia (ANC <500/µL), compatible clinical features, and imaging evidence of bowel wall thickening ≥4 mm—were included. Clinical, imaging, and outcome data were extracted from electronic records and analysed using SPSS version 26. Results: Twenty-three patients were included with a median age of 7 years (IQR 5–13). Acute lymphoblastic leukemia was the most common malignancy (65.2%). Most cases occurred during induction chemotherapy (43.5%). Ultrasound commonly showed bowel dilatation (73.9%), diffuse bowel involvement (47.8%), and ascites (39.1%). Diffuse multisegmental involvement was associated with severe complications including sepsis, multi-organ failure, perforation, and higher mortality. Overall, 30-day mortality was 56.5%. Conclusion: Diffuse bowel involvement and increased bowel wall thickness on imaging are associated with poorer outcomes in paediatric NE, highlighting the importance of early radiological recognition and timely management.

By Dr. SOURA JAWED

Correlation of Radiological Findings with Clinical Outcomes in Pediatric Neutropenic Enterocolitis Authors: Dr. Soura Jawed, Dr. Hana Arbab Department: Paediatric Surgery, Indus Hospital & Health Network, Karachi Background: Neutropenic enterocolitis (NE) is a life-threatening gastrointestinal emergency in paediatric oncology patients receiving intensive y

chemotherapy and remains associated with significant morbidity and mortality. Data from low- and middle-income countries are limited. This study aimed to evaluate the correlation between radiological findings and clinical outcomes in paediatric patients with NE. Methods: A retrospective study was conducted at Indus Hospital & Health Network, Karachi (July 2018–August 2025). Paediatric oncology patients aged 1–15 years meeting NE criteria—neutropenia (ANC <500/µL), compatible clinical features, and imaging evidence of bowel wall thickening ≥4 mm—were included. Clinical, imaging, and outcome data were extracted from electronic records and analysed using SPSS version 26. Results: Twenty-three patients were included with a median age of 7 years (IQR 5–13). Acute lymphoblastic leukemia was the most common malignancy (65.2%). Most cases occurred during induction chemotherapy (43.5%). Ultrasound commonly showed bowel dilatation (73.9%), diffuse bowel involvement (47.8%), and ascites (39.1%). Diffuse multisegmental involvement was associated with severe complications including sepsis, multi-organ failure, perforation, and higher mortality. Overall, 30-day mortality was 56.5%. Conclusion: This study will provide region-specific insights into the clinical spectrum and outcomes of NE, guiding early recognition, timely intervention, and improved management protocols in paediatric oncolog

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RADIATION ASSOCIATED CHRONIC CERVICITIS

By Dr. SANA NAEEM

Introduction: Advances in radiotherapy such as Volume Modulated Arc Therapy (VMAT) and Image-Guided Adaptive Brachytherapy (IGABT) have improved local control in locally advanced cervical cancer. However, higher radiation doses have led to an increased incidence of radiation-associated chronic cervicitis (RACC), which can mimic tumor recurrence and significantly impact quality of life. Integrating imaging, clinical evaluation, and dosimetric analysis may help differentiate chronic radiation injury from persistent disease. Methodology: This retrospective observational study will include

patients with histologically confirmed cervical cancer treated with curative VMAT and IGABT, with ≥3–6 months post-treatment follow-up. Data collection consists of: (1) Dosimetric analysis of IGABT, with dose recording at predefined anatomical points (C–H) around the cervical os. To collect data, 1st set origin at External os inferiorly and at surface of tandem on either side Right or left. open 0.5 cm grid and it automatically comes on user origin. Note point doses at 0.5 cm, 1cm, 1.5 cm and 2 cm on Right and than on left side. (2) Clinical assessment using a standardized questionnaire documenting vaginal discharge, pelvic discomfort, dyspareunia, and postcoital bleeding; (3) Radiologic evaluation using MRI and/or PET-CT to identify post-radiation inflammatory changes and differentiate them from recurrence. Statistical analysis will correlate dose parameters with clinical and MRI findings. Results: Results : The study define dose–response relationships for chronic cervical radiation injury, identify MRI features distinguishing RACC from recurrent disease, and determine predictive dosimetric thresholds associated with chronic cervicitis. Conclusion: This study aims to investigate the clinical and radiological characteristics of Radiation Associated Chronic Cervicitis (RACC) and its influence on patients' quality of life. On clinical assesment, Patients with radiation-associated chronic cervicitis usually present with persistent watery or foul vaginal discharge and recurrent post-coital or spontaneous bleeding. They may also experience pelvic pain, dyspareunia, and cervical friability or ulceration on examination. Vaginal bleeding: usually Grade 1–2 (mild to moderate, recurrent, either spontaneous or post coital). • Type of discharge: watery or foul smelling, often persistent. • Pelvic pain: generally Grade 1–2 (mild to moderate, chronic discomfort or dyspareunia). • Post coital bleeding: most often Grade 2 (recurrent, impacting quality of life). These grades are based on CTCAE v 5.0 grading scoring systems Radiologically, On MRI, radiation-associated chronic cervicitis shows diffuse cervical wall thickening with low T2 signal intensity due to fibrosis and loss of normal cervical architecture with mild, heterogeneous enhancement but no discrete mass. This pattern helps distinguish it from recurrent cervical carcinoma, which typically appears as a nodular, high T2 signal lesion with irregular strong enhancement. We identify pertinent dose points within the cervix to comprehend the extremely high radiation dose levels known to induce normal tissue necrosis. We are concerned that increased cervical tissue dosage is becoming an issue due to: 1. The trend of dose escalation following the adoption of image-guided brachytherapy. 2. The practice of extending the prescription isodose beyond "point A" to the High-Risk Clinical Target Volume (HRCTV) in larger targets, which results in significant dose gradients. 3. The EMBRACE protocol's requirement to reduce vaginal TRAK, which invariably leads to increased tandem loading and consequently higher cervical tissue doses. 4. The infrequent use of interstitial needles in most practices to encompass parametrial targets, necessitating very high doses to the cervical tissue. Intracavitary brachytherapy will be associated with ultrahigh dose (necrotizing range) to cervical tissue. while Intracavitary brachytherapy with interstitial needles (interstitial hybrid brachytherapy will lower (smear) these high dose regions.

TO STUDY THE RESPONSE RATE OF HYPO-FRACTIONATED BLADDER PRESERVATION RADIOTHERAPY IN MUSCLE INVASIVE BLADDER CANCER

By Dr. SHEIKH TAHIR SIDDIQUE

TO STUDY THE RESPONSE RATE OF HYPO-FRACTIONATED BLADDER PRESERVATION RADIOTHERAPY IN MUSCLE INVASIVE BLADDER CANCER • DR. SHEIKH TAHIR SIDDIQUE , DR. ZEESHAN BADAR , DR SANA NAEEM , DR. SADIA SADIQ , DR RAB NAWAZ MAKEN Abstract Objective: To determine the response rate of hypofractionated bladder-preservation radiotherapy in patients with muscle-invasive bladder cancer according to RECIST criteria. Study Design: Descriptive case series. Place and Duration of Study: Department of Radiotherapy, Institute of Nuclear Medicine & Oncology (INMOL), Lahore, from June 2025 to September 2025.

Methodology: A total of 66 patients aged 25–70 years with histopathologically confirmed muscle-invasive bladder cancer (T2–T4a, N0–N1, M0) and ECOG performance status 0–1 were enrolled using non-probability consecutive sampling. Results: The mean age of patients was 49.8 ± 11.6 years, and 78.8% were males. Complete response was observed in 74.2% of patients, partial response in 13.6%, stable disease in 7.6%, and progressive disease in 4.6%, yielding an overall response rate of 87.8%. Response rates were highest in T2-stage tumors and declined with advancing tumor stage. Grade III toxicity occurred infrequently, and treatment interruption was required in only 3.0% of patients. Conclusion: Hypofractionated bladder-preservation radiotherapy achieves a high response rate with acceptable acute toxicity in muscle-invasive bladder cancer, representing an effective and well-tolerated bladder-sparing treatment option for appropriately selected patients.

• EFFICACY AND SAFETY OF RITUXIMAB PLUS DOSE ADJUSTED ETOPOSIDE, PREDNISONE, VINCRISTINE, CYCLOPHOSPHAMIDE AND DOXORUBICIN (R-DA-EPOCH) REGIMEN IN HIGH GRADE DIFFUSE LARGE B- CELL LYMPHOMA PATIENTS (HG-DLBCL)

By Dr. ZEESHAN BADAR

• EFFICACY AND SAFETY OF RITUXIMAB PLUS DOSE ADJUSTED ETOPOSIDE, PREDNISONE, VINCRISTINE, CYCLOPHOSPHAMIDE AND DOXORUBICIN (R-DA-EPOCH) REGIMEN IN HIGH GRADE DIFFUSE LARGE B- CELL LYMPHOMA PATIENTS (HG-DLBCL) • DR ZEESHAN BADAR , DR SHEIKH TAHIR SIDDIQUE , DR ZIAUDDIN AHMED Abstract Objective: To determine the efficacy and safety of rituximab plus dose-adjusted etoposide, prednisone, vincristine, cyclophosphamide and doxorubicin (R-DA-EPOCH) regimen in patients with high-grade diffuse large B-cell lymphoma (HG-DLBCL). Study Design: Descriptive case series.

Methodology: A This study was coducted at the Department of Medical Oncology, INMOL Hospital, Lahore. A total of 87 patients aged 18–60 years diagnosed with HG-DLBCL were included through non-probability consecutive sampling. All patients received six cycles of R-DA-EPOCH every three weeks, followed by FDG-PET/CT evaluation four weeks after treatment completion. Results: The mean age of patients was 48.6 ± 9.3 years, with 57.5% males. Complete response was achieved in 65.5% of patients, and partial response in 18.4%, yielding an overall response rate of 83.9%. Non-response and disease progression were observed in 9.2% and 6.9% of patients, respectively. Hematologic toxicities such as neutropenia, anemia, and thrombocytopenia were common but manageable. No treatment-related mortality occurred, and 93.1% of patients completed all chemotherapy cycles. Conclusion: It is concluded that the R-DA-EPOCH regimen is an effective and well-tolerated treatment option for high-grade DLBCL, achieving high response rates with acceptable toxicity.

FREQUENCY OF DISEASE-FREE AND OVERALL SURVIVAL OUTCOMES IN TRIPLE-NEGATIVE BREAST CANCER PATIENTS FOLLOWING NEOADJUVANT CHEMOTHERAPY.

Dr Amber Amin

Background: Triple-negative breast cancer (TNBC) is an aggressive subtype lacking hormonal and HER2 receptors, limiting targeted therapies. Although pathological complete response (pCR) after neoadjuvant chemotherapy (NACT) is associated with improved outcomes, survival data from low- and middle-income countries remain limited. Objective: To determine 12-month disease-free survival (DFS) and overall survival (OS) among stage II–III TNBC patients achieving pCR after NACT followed by modified radical mastectomy (MRM), and to identify clinicopathological factors affecting outcomes. Methods: This descriptive case series was conducted at INMOL Hospital, Lahore, including 150 women aged

18–60 years with stage II–III TNBC who achieved pCR after NACT and underwent MRM. Demographic, treatment, and pathological data were collected. DFS and OS at 12 months were recorded. Statistical analysis was performed using SPSS version 27 with chi-square testing and logistic regression. Ethical approval was obtained in accordance with the Declaration of Helsinki. Results: At 12 months, DFS was 88% and OS was 96%. Positive surgical margins were significantly associated with reduced DFS (p=0.001), while lymph node involvement was linked to decreased OS (p=0.015). BMI, comorbidities, and tumor size showed no significant associations. Conclusion: TNBC patients achieving pCR demonstrate favorable short-term survival; however, margin status and nodal involvement remain important prognostic factors

PLAN OF THE DAY ADAPTIVE RADIOTHERAPY IN CERVICAL CANCER: A DOSIMETRIC AND CLINICAL FEASIBILITY STUDY

By Dr. FAIEQA ASLAM

Introduction: Cervical cancer is prone to potentially large and frequent inter-fractional anatomical variations due to bladder and rectal filling that can compromise target coverage and increase organ at risk dose (OAR). While internal target volume (ITV) methods account for this, they often increase bowel exposure. We evaluated a Plan-of-the-Day (PoD) adaptive radiotherapy approach using a library of plans to ensure target coverage while reducing OAR dose. Methods: Eleven patients with stage IB–IVA cervical cancer received neoadjuvant chemotherapy followed by concurrent chemoradiation (45 Gy/25 fractions with 55 Gy SIB to pelvic nodes), weekly cisplatin, and image-guided brachytherapy. CT simulations with empty- and full-bladder protocols generatedcorresponding PTVs (ePTV and fPTV) for the plan library. Daily CBCT guided Plan-of-the-Day selection based on anatomical variations. Primary endpoint was OAR dose reduction; secondary endpoints were acute GI and GU toxicity. Results: A total of 15 patients (median age 60, median stage III) contributed 375 fractions. Daily plan selection proved feasible, with 93% of fractions treated using the full bladder plan and only 7% requiring the empty-bladder plan. FB planning demonstrated superior dosimetry, achieving a median PTV V95 of 99% compared with 93% for EB ($p<0.05$). It also improved OAR sparing, reducing bladder V40 from 57.4% to 48.7% ($p<0.05$) and lowering irradiated small bowel volume by a median of 114 cm^3 (62% relative; $p < 0.05$). These findings affirm the dosimetric benefits of a full-bladder PoD adaptive approach. Acute grade >= 2 GU and GI toxicity reported in 18% and 20% respectively. Conclusion: Daily CBCT–guided Plan-of-the-Day adaptive radiotherapy compensates for inter-fractional anatomical changes, has the potential to enable future reduced CTV-to-PTV margins. The PoD approach ensures target coverage while sparing bowel and bladder. Successful implementation depends on patient compliance with bladder-filling instructions, emphasizing the need for consistent pre-treatment preparation to maximize adaptive radiotherapy benefits.

3D Spatial Interaction Mapping and Geometric Robustness of High-Dose Mucosal Exposure: A Novel Surface-Based Predictor of Late Vaginal Stenosis

By Dr. SAMINA SIDDIQUE

Introduction: Late vaginal morbidity remains a significant quality-of-life issue in locally advanced cervical cancer (LACC), with ~30% of patients developing Grade ≥2 vaginal stenosis. The EMBRACE II trial promotes vaginal dose de-escalation; however, current monitoring relies on point-based metrics (ICRU rectovaginal and PIBS points) that inadequately capture circumferential mucosal dose exposure. Due to steep brachytherapy dose gradients, small applicator shifts may substantially alter mucosal dose distribution. Objective: To evaluate

surface-based 3D spatial dosimetry and develop a Vaginal Robustness Index (VRI) for predicting vaginal stenosis. Methods: A pilot analysis (N=50) of patients treated according to EMBRACE II principles was performed. The vaginal wall was contoured as a 3–5 mm mucosal shell from introitus (PIBS-2 cm) to vault. Surface dosimetry included: (1) interaction surface area between mucosa and the 140% isodose (~85 Gy EQD2 equivalent), (2) dose-surface histogram (DSH) metrics quantifying mucosal surface receiving ≥140% dose, and (3) circumferential arc exposure (degrees). Virtual applicator shifts of 1–2 mm were simulated to assess geometric robustness. VRI was defined as the percentage increase in mucosal surface exposed to ≥ 140% dose per millimeter shift. Spatial dose distribution was visualized using a vaginal toxicity heat-map. Vaginal stenosis was assessed using CTCAE criteria. Results: Surface-based metrics and VRI correlated more strongly with Grade ≥2 stenosis than conventional point doses. Plans with VRI >10%/mm and circumferential exposure >120° demonstrated higher toxicity. Conclusion: Surface-based spatial dosimetry and robustness analysis may improve prediction of vaginal morbidity and complement EMBRACE II vaginal dose-sparing strategies.

Emergent Planning Phenotypes in Posterior Fossa Boost Radiotherapy for Pediatric Medulloblastoma: A Structured LLM-Assisted Dosimetric Synthesis

By Dr. SAMINA SIDDIQUE

Background: Pediatric medulloblastoma survivors are highly vulnerable to long-term treatment-related toxicities, including ototoxicity and neurocognitive impairment. Although craniospinal irradiation (CSI) protocols provide standardized dose prescriptions, substantial variability exists in the planning of the posterior fossa boost, where target coverage must be balanced against doses to critical organs such as the brainstem and cochleae. This study aimed to characterize this variability and identify reproducible planning phenotypes reflecting patterns of clinical decision-making. Methods: A retrospective dosimetric audit was conducted on 30 pediatric medulloblastoma patients treated with photon-based CSI followed by posterior fossa boost radiotherapy. Key parameters included PTV coverage (PTV V95%V_{95\%}V95%), PTV DmaxD_{max}Dmax, bilateral cochlear mean dose (DmeanD_{mean}Dmean), and brainstem DmaxD_{max}Dmax. A Large Language Model (LLM) was used for structured thematic synthesis of tabulated dosimetric metrics and planning notes to identify recurring planning trade-offs and cluster cases into characteristic patterns. Results: Three dominant planning phenotypes emerged: Cochlear-Sparing Dominant, prioritizing cochlear protection with increased PTV heterogeneity; Brainstem-Prioritized, maintaining strict brainstem constraints while accepting moderate cochlear dose; and Conformity-Focused, achieving highly conformal PTV coverage with OAR doses near tolerance limits. Conclusion: Distinct planning phenotypes exist in posterior fossa boost radiotherapy, reflecting implicit clinical trade-offs. Identifying these patterns may support institutional harmonization and future decision-support strategies to optimize long-term pediatric outcomes.

Interfraction Geometric Variation Index (IGVI): A Predictive Metric for Biological Dose Degradation Caused by Bladder-Driven Uterine Motion in Cervical Cancer Brachytherapy

By Dr. MUHAMMAD UMAIR

Image-guided brachytherapy for cervical cancer relies on steep dose gradients around the intracavitary applicator to achieve adequate target coverage while sparing organs at risk. Evidence from the EMBRACE II study has demonstrated that uterine motion during treatment can exceed cervical motion, with interfraction displacements reported up to 4–6 cm. Although the tandem applicator is relatively stabilized by vaginal packing, the uterine fundus

remains highly mobile and is influenced by bladder and rectal filling. These geometric variations may lead to clinically significant biological dose degradation to the high-risk clinical target volume (CTV-HR). A quantitative metric linking uterine motion to applicator geometry and cumulative dose uncertainty is currently lacking. Objective To develop an Interfraction Geometric Variation Index (IGVI) that quantifies geometric variability between the uterine axis and tandem applicator across fractions and to evaluate its relationship with target dose degradation. Methods A retrospective analysis of a pilot cohort (N = 50) was performed using a prospectively maintained institutional brachytherapy database. For each fraction, the angular deviation between the tandem axis and uterine longitudinal axis was measured on sagittal 3D imaging and correlated with bladder filling under a standardized 300–500 ml drinking protocol. IGVI was defined as a composite geometric metric integrating angular variability and spatial displacement of the uterine fundus: IGVI = $\sqrt{(\sigma\theta^2 + (\sigma d / L)^2)}$ where σθ represents angular variability and σd represents spatial displacement normalized by uterine length (L). To characterize cumulative positional variability, a Uterine Sweep Volume (USV) representing the union of all uterine positions across fractions was constructed. IGVI values were correlated with interfraction variation in CTV-HR D90 and GTVres D98 expressed in EQD2. Results Patients with higher IGVI values demonstrated significantly greater variability in target dose coverage. In cases with inconsistent bladder filling between fractions, geometric deviations resulted in biological dose degradation exceeding 5 Gy EQD2 in approximately 15% of fractions. The addition of interstitial needles created localized high-dose regions that further increased the sensitivity of cumulative coverage to uterine positional variability. Conclusion IGVI provides a novel geometric framework linking bladder-driven uterine motion with biological dose uncertainty in cervical cancer brachytherapy. This metric may enable early identification of patients with large interfraction motion and support predictive adaptive strategies such as individualized tandem angulation or early use of combined intracavitary–interstitial techniques to maintain cumulative CTV-HR doses ≥ 85 Gy EQD2.

CLINICAL AND PATHOLOGICAL RESPONSE IN RECTAL CANCER OF TOTAL NEOADJUVANT THERAPY (TNT) USING LONG-COURSE CHEMORADIOTHERAPY (LCCRT)

By Dr. SHAHZEB

Objectives: 1. To evaluate the clinical response rates to long-course CCRT in rectal cancer patients, including tumor size reduction and the rate of conversion to resectable disease. 2. To investigate the pathological response rates, focusing on the rates of complete pathological response (pCR) and significant tumor regression following treatment. Materials and Methods: This study was conducted at the Department of Radiation Oncology, CMH Rawalpindi, enrolling 44 biopsy-proven rectal adenocarcinoma patients. Patients received 3–4 cycles of CAPOX chemotherapy, followed by concurrent chemoradiotherapy (CCRT) with 45 Gy in 25 fractions plus a 5.4 Gy boost, and oral capecitabine on radiation days. Post-CCRT evaluation was done 4–6 weeks later using MRI, CT scan, digital rectal examination, and sigmoidoscopy where required. Clinical response was assessed per RECIST 1.1. Postoperative pathology determined treatment response, and data were recorded on a structured proforma. Data were collected and analyzed using SPSS v.25. Results: Clinical responses were complete in 36.4%, partial in 47.7%, stable disease in 9.1%, and progressive disease in 6.8% of the patients. Pathological stage was ypT0N0 in 20.5%, ypT1T2N0 in 29.5%, and ypT3–T4 and/or N+ in 50%. Low anterior resection was done in 61.4%, and abdominoperineal resection in 38.6%, with negative margins in 81.8%. Lymph node involvement was negative in 59.1% and positive in 40.9%. Conclusion: It was concluded that TNT with LCCRT is an effective

treatment for rectal cancer, producing favorable pathological and clinical responses. A notable pCR rate was achieved, and many patients had complete or partial clinical responses. These results suggest that TNT with LCCRT is a practical approach to improve disease control, surgical strategies, and overall treatment outcomes in locally advanced rectal cancer. Key words: total neoadjuvant therapy, rectal cancer, pathological complete response.

CLINICAL OUTCOMES OF MULTISESSION STEREOTACTIC RADIOSURGERY FOR PITUITARY ADENOMAS: AN INSTITUTIONAL EXPERIENCE WITH LONG-TERM FOLLOW-UP

By Dr. ZAINAB RAFAT ALI

INTRODUCTION Pituitary adenomas are common benign intracranial tumors that cause morbidity via hormonal dysfunction or optic compression. While microsurgical resection is standard, residual or recurrent disease is frequent, especially in tumors invading the cavernous sinus or parasellar region. Stereotactic radiosurgery (SRS) is a minimally invasive alternative, but single-fraction SRS near the optic chiasm risks visual compromise. Multisession SRS offers safer treatment with maintained efficacy. This study reports long-term outcomes of pituitary adenomas treated with multisession SRS at the Neurospinal and Cancer Care Institute (NCCI), Karachi. METHODS A retrospective review included 113 patients (81 males, 32 females) treated over 7 years with multisession SRS on an Elekta Synergy-S linear accelerator. Prescribed dose was 20–25 Gy in five fractions to 80–85% isodose. MRI, endocrine assessments, and visual perimetry were performed at 3, 6 months, then biannually. Data were analyzed using SPSS v29; survival was estimated by Kaplan–Meier. RESULTS Mean age was 43.2 years. Non-functioning adenomas comprised 71.7%; 28.3% were hormone-secreting. Tumor reduction occurred in 65%, stability in 28%, progression in 7%. Visual improvement was seen in 42%, stability in 56%, and deterioration in 2%. Endocrine normalization occurred in 38% of functioning tumors. Acute toxicity was minimal; no optic neuropathy or apoplexy occurred. Five-year overall survival was 86%, with local control >90%. CONCLUSION Multisession SRS is safe, effective, and preserves vision, offering a low-toxicity alternative for complex or recurrent pituitary adenomas.

Outcomes and Toxicity of Simultaneous Integrated Boost (SIB) in Lymph node positive Cervical Cancer

By Dr. ABDUL WAJID KHAN

Outcomes and Toxicity of Simultaneous Integrated Boost (SIB) in Lymph node positive Cervical Cancer AUTHORS: Dr Abdul Wajid Khan Dr Esha Dr Tabinda Sadaf BACKGROUND: Cervical cancer remains a major cause of cancer-related morbidity and mortality worldwide, particularly in developing countries. Patients with lymph node–positive disease have a poorer prognosis due to a higher risk of locoregional recurrence and distant metastasis. The standard treatment for locally advanced cervical cancer is definitive concurrent chemoradiotherapy followed by brachytherapy, which improves disease control and survival. However, adequate radiation dose to involved lymph nodes is important for better local control. With conventional radiotherapy techniques, dose escalation to lymph nodes may increase radiation exposure to surrounding normal tissues and lead to higher toxicity. Modern radiotherapy techniques such as intensity-modulated radiotherapy (IMRT) allow more precise radiation delivery. The Simultaneous Integrated Boost (SIB) technique enables higher radiation doses to be delivered to involved lymph nodes during the same treatment course while limiting toxicity to normal tissues. Therefore, evaluating the clinical outcomes and treatment-related toxicities of SIB in lymph node–positive cervical cancer patients is important to determine its effectiveness and safety. Although international studies have shown promising results, there is a paucity of local data from Pakistan

regarding the outcomes and safety of this approach. Therefore, this study was conducted to evaluate the oncologic outcomes and toxicity of SIB in lymph node–positive cervical cancer patients in our local population. OBJECTIVES: The objective of this study is to assess the oncologic outcomes and toxicities in cervical cancer patients treated with definitive chemo radiotherapy with a Simultaneously Integrated Boost (SIB) to involved lymph nodes in node positive cervical cancer patients. METHODS: This retrospective study included all patients of cervical cancer treated with SIB from 2017 till 2022 at our institution. The patients received Concurrent chemo radiotherapy (CRT) at a dose of 53-60.76Gy in 25-28 fractions with simultaneous boost to the involved lymph nodes along with weekly cisplatin 40mg/m2, followed by brachytherapy at dose of 24Gy in 4 fractions starting within last week of radiation. RESULTS: Total 110 patients were analyzed in this study. Mean age was 49 years (29-72). It included patients with FIGO stage IIIC1 (84%) , IIIC2 (12%) and IVA (5%) with squamous cell carcinoma in 91% of patients. Median follow up duration was 21 months (2-67). 2-year OS and DFS was 80% and 66% respectively. Median overall survival not reached. The complete response rate was 79% in primary tumor and 83% in the nodal volume receiving SIB. 18% patients had locoregional relapse after initial treatment where 19% developed distant metastasis. Most common site of metastasis was lungs followed by liver. Significant association was seen between lymph node size and response to treatment. Mean lymph node diameter of those with complete, partial, no response was 1.6, 2.5, 4.7cm respectively (p value 0.009). 7 patients (6.3%) developed grade three toxicity, 30 patients (27%) developed grade two or above acute toxicity. 5 patients developed fistula. CONCLUSION: Although follow up of the patients in this study is ongoing, the results of this analysis suggest that treatment with Simultaneous Integrated boost to lymph node positive cervical cancer patients has encouraging clinical outcomes and local control with acceptable toxicity.

Correlation Between Clinical and Pathological Response After Chemoradiotherapy in Esophageal Squamous Cell Carcinoma: A Prospective Study from a LMIC

By Dr. SADIA ANJUM

Background Esophageal squamous cell carcinoma is an aggressive malignancy with poor survival, particularly in low- and middle-income countries (LMICs). Concurrent chemoradiotherapy (CRT) is a standard treatment for locally advanced disease. However, the reliability of clinical assessment methods such as imaging and endoscopy in predicting pathological response after CRT remains uncertain, often leading to treatment dilemmas. Methods This prospective observational study will be conducted at a tertiary cancer centre and will include 38 patients with locally advanced, resectable esophageal SCC treated with CRT (45 Gy in 25 fractions with weekly carboplatin and paclitaxel). Clinical response will be evaluated six weeks after CRT using CT imaging and endoscopy according to RECIST 1.1 criteria. Pathological response will be assessed using tumor regression grading on surgical specimens or biopsy samples. Statistical analysis will determine sensitivity, specificity, positive and negative predictive values of clinical assessment in predicting pathological complete response. Results Primary outcomes include correlation between clinical response and pathological response following CRT. Conclusion This study aims to determine the reliability of clinical response assessment in predicting pathological outcomes, potentially guiding treatment decisions and improving management strategies for esophageal SCC in LMIC settings.

Molecular Landscape of Solid Tumors at a Tertiary Cancer Center in Pakistan: A Retrospective Analysis of Next-Generation Sequencing Reports

By Dr. SADIA ANJUM

Background: Molecular profiling has transformed cancer management by enabling identification of actionable genomic alterations and guiding targeted therapies. However, data on the molecular landscape of solid tumors from low- and middle-income countries remain limited. This study aimed to characterize the spectrum of genomic alterations detected through molecular biomarker testing in patients with solid tumors at a tertiary cancer center in Pakistan. Methods: A retrospective analysis was conducted of patients with solid tumors who underwent molecular biomarker testing between January 2023 and June 2025 at Shaukat Khanum Memorial Cancer Hospital & Research Centre. Molecular profiling was performed using targeted next-generation sequencing panels, including the AmpliSeq Cancer Hotspot Panel v2 and a multigene hereditary cancer panel. Detected variants were categorized as pathogenic, variants of uncertain significance (VUS), or benign. Results: A total of 571 patients were analyzed. Pathogenic or likely pathogenic mutations were identified in 140 patients (24.5%). Breast cancer constituted the majority of tested cases. The most frequently detected pathogenic mutations were in BRCA1, BRCA2, TP53, KRAS, and PIK3CA. Conclusion: This study highlights the distribution of clinically relevant genomic alterations in a Pakistani cancer population and supports the growing role of molecular diagnostics in precision oncology within resource-limited settings.

Acute and Financial Toxicity in FAST-Forward versus START Radiotherapy for Early Breast Cancer: A Prospective Randomized Trial (RCT) from a LMIC

By Dr. SADIA ANJUM

Background Hypofractionated radiotherapy has become standard for early breast cancer, offering comparable outcomes with improved convenience. The FAST-Forward regimen (26 Gy in 5 fractions) further shortens treatment duration compared with the START regimen (40 Gy in 15 fractions). However, data comparing acute toxicity and financial burden in low- and middle-income countries (LMICs) remain limited. Methods This prospective open-label randomized controlled trial will enroll 290 patients with early-stage breast cancer requiring breast and supraclavicular fossa irradiation at a tertiary cancer centre. Participants will be randomized to FAST-Forward (26 Gy/5 fractions) or START (40 Gy/15 fractions). Acute toxicity will be assessed using CTCAE v5.0, and financial toxicity will be evaluated using the COST questionnaire. Patients will be followed weekly during treatment and at 1, 3, and 6 months post-radiotherapy. Results Primary outcomes include incidence of grade ≥2 acute toxicities within three months and comparative financial toxicity scores between treatment arms. Conclusion This study aims to determine whether the ultra-hypofractionated FAST-Forward regimen provides comparable safety with reduced financial burden, supporting more cost-effective radiotherapy strategies in LMIC settings.

OUTCOMES OF SQUAMOUS CELL CARCINOMA OF THE ANAL CANAL TREATED WITH DEFINITIVE CHEMORADIATION: A SINGLE INSTITUTIONAL EXPERIENCE

By Dr. MUSHAYYADA FATIMA

ABSTRACT Background: Anal canal carcinoma is rare (~3% of gastrointestinal cancers) with squamous cell carcinoma as the predominant subtype. Definitive chemoradiation is the standard for non-metastatic disease, offering tumor control while preserving sphincter function. This study evaluates treatment outcomes, survival, and toxicity in a single tertiary center. Methods: A retrospective review of 24 patients aged 18–65 years with biopsy-proven anal canal squamous cell carcinoma treated with definitive chemoradiation at SKMCH&RC was performed. Exclusion criteria included metastatic disease, prior pelvic radiotherapy, second primary malignancy, or poor performance status. Data on demographics, tumor stage, treatment, response, progression, survival, and toxicity were analyzed. Results: Median follow-up was 18 months. Complete response was observed in 33% and partial response in 46%, giving an overall response rate of 79%. Progressive disease occurred in 12%. Estimated 1-year PFS and OS were 71% and 75%, respectively, while 2-year PFS and OS were 62% and 66%. Most toxicities were grade 1–2; grade 3 toxicity occurred in ~4%. Conclusion: Definitive chemoradiation achieves high response rates with favorable short- and intermediate-term OS and PFS and acceptable toxicity, supporting its role as an organ-preserving standard therapy for anal canal squamous cell carcinoma. Keywords: Anal canal carcinoma; Squamous cell carcinoma; Chemoradiation; Radiation therapy; Overall survival; Progression-free survival; Mitomycin; 5-Fluorouracil

PRIMARY ECCRINE POROCARCINOMA OF SCALP: A CASE REPORT AND REVIEW OF LITERATURE

By Dr.MUHAMMAD UZAIR

Background: Eccrine porocarcinoma (EPC) is a rare malignant tumor arising from the eccrine sweat glands and accounts for less than 0.005% of all epithelial cutaneous neoplasms. It is most commonly observed in elderly individuals, particularly in the sixth and seventh decades of life. Due to its rarity and variable clinical presentation, diagnosis and management remain challenging, and limited literature is available regarding optimal treatment strategies. Case Description: A 58-year-old female presented with a painless lesion on the left parietal region of the scalp that had gradually increased in size over one year. Clinical examination revealed a 2.5 × 5 cm erythematous lesion without regional lymphadenopathy. The differential diagnoses included squamous cell carcinoma and malignant skin adnexal tumor. The patient underwent wide local excision. Histopathological evaluation confirmed eccrine porocarcinoma with a close deep margin of 1 mm and evidence of lymphovascular and perivascular invasion. Microscopy demonstrated dermal infiltration by nests and strands of atypical poroid cells connected to the epidermis with focal ductular, squamoid, and sebaceous differentiation. After multidisciplinary discussion, adjuvant radiotherapy of 50 Gy in 20 fractions over four weeks was administered due to close margins and high-risk features. Discussion: Surgical excision is the mainstay of treatment for EPC, while adjuvant radiotherapy may be considered in cases with unfavorable pathological features or close margins. Conclusion: Early diagnosis and a multidisciplinary management approach are essential to achieve favorable outcomes in this rare malignancy.

PLEOMORPHIC XANTHOASTROCYTOMA WHO GRADE-1 TRANSFORMED INTO GLIOSARCOMA; A CASE REPORT AND LITERATURE REVIEW

By Dr.MUHAMMAD UZAIR

Abstract Background: Pleomorphic xanthoastrocytoma (PXA) is a rare astrocytic tumor classified as World Health Organization (WHO) grade 1 and is generally associated with a relatively favorable prognosis. However, malignant transformation into high-grade tumors such as glioblastoma or gliosarcoma is extremely uncommon. Because of the limited number of reported cases, the clinical behavior, treatment strategies, and outcomes of such transformation remain poorly understood. Case Description: We report a patient with PXA involving the right parieto-occipital region who initially underwent surgical resection with no residual disease on postoperative imaging. During follow-up, the patient developed local recurrence in the right occipital region and subsequently underwent repeat surgical resection. Histopathological evaluation revealed pleomorphic astrocytic cells with marked nuclear atypia, pseudopalisading necrosis, and a sarcomatous component, consistent with gliosarcoma likely arising from the previously diagnosed PXA. Considering the aggressive nature of the disease, the patient received radical chemoradiotherapy consisting of 60 Gy in 30 fractions with concurrent temozolomide. Despite treatment, further progression occurred in the surgical bed along with bone metastasis. Palliative radiotherapy (8 Gy in a single fraction) was delivered to the metastatic lesion, and the patient was referred to palliative care. Discussion: Malignant transformation of PXA into gliosarcoma is rare and associated with aggressive disease behavior. Conclusion: This case highlights the potential for malignant progression in PXA and emphasizes the importance of close surveillance and multidisciplinary management.

ASSESSMENT OF PATHOLOGICAL RESPONSE AFTER TOTAL NEOADJUVANT THERAPY FOLLOWED BY SURGERY IN LOCALLY ADVANCED RECTAL CANCER

By Dr. MAIRA ZAFAR

Introduction: Colorectal cancer is the 3rd most common cancer worldwide with geographical variation in incidence rates1. According to the Global Cancer Registry 2022, it has 4th most common incidence among both sexes in Pakistan, and 3rd most frequent prevalence in males than females. With such extensive disease, use of neoadjuvant chemoradiotherapy followed by surgery remains the mainstay of the treatment. With variation in approach to TNT, induction chemotherapy followed by chemoradiotherapy is a preferable sequence with better outcomes8 Objectives: To assess Pathological Response after Total Neoadjuvant Therapy followed by Surgery in patients of Locally Advanced Rectal cancers in our institute. Methods: This prospective cross-sectional study was conducted at Radiation Oncology Department of Shifa International Hospital, over a duration of 12 months. The study population included patients with biopsy-proven rectal cancer with T3–T4 and/or node-positive disease, without distant metastasis. Patients with prior pelvic irradiation, or those deemed infeasible for resection due to intolerance to chemoradiotherapy, disease progression, or lost to follow-up were excluded. Induction chemotherapy with either CAPOX, FOLFIRINOX or FOLFOX-based regimen 4-6 cycles followed by long-course chemoradiotherapy (50.40Gy in 25-28 fractions of 1.8-2Gy over 5 weeks, with concurrent 825mg/m2 capecitabine), was given followed by 6-8 weeks gap and later underwent surgery. Data was entered and analysed using SPSS v25. Results: A total of 21 patients were enrolled in the study, with a male predominance of 57.1% (n=12) compared to females 42.9%(n=9). The median age of the study population was 58 years (25–71 years). The most common TNM stage observed was T3 (71.4%). Tumours were most frequently located in the

mid-rectum (42.9%), followed by the proximal rectum. Among the 21 patients, 11 received the CAPOX regimen and completed up to six cycles. The interval between completion of total neoadjuvant therapy and surgery was 7–8 weeks. LAR was performed in 52.4% of patients. Post-surgery, pathological specimens most commonly showed moderately differentiated adenocarcinoma. Pathological staging revealed partial response being the most frequent (38.1%), followed by complete (CR) response (33.3%) making treatment response upto (71.3%) together, and rest as poor response (28.6%). Conclusion: Neoadjuvant chemotherapy followed by long course chemoradiotherapy has a substantial benefit in downstaging disease into complete to partial pathological response, a promising treatment paradigm in locally advanced rectal tumors.

Dosimetric Evaluation of Left Anterior Descending Artery and Left Ventricle in Left-Sided Breast Cancer Treated with IMR

By Dr. QAZI SAJJAD

Title: Dosimetric Evaluation of Left Anterior Descending Artery and Left Ventricle in Left-Sided Breast Cancer Treated with IMRT Authors: Hafsa Rais[1], Qazi Sajjad[1] (Corresponding Author), Sehrish Abrar[1] Affiliation: [1]Department of Radiation Oncology, Sindh Institute of Urology and Transplantation (SIUT) Corresponding Author Email: Qazi.sajjad55@gmail.com Background: Cardiac toxicity remains a concern in left-sided breast cancer radiotherapy due to the proximity of the heart to treatment fields. Mean heart dose may not accurately reflect radiation exposure to critical cardiac substructures such as the left anterior descending artery (LAD) and left ventricle (LV). This study evaluated the dosimetric impact of contouring these structures as organs at risk during IMRT planning. Methods: A retrospective analysis of 24 patients with left-sided breast cancer treated with post-mastectomy radiotherapy (40 Gy in 15 fractions) using IMRT was performed. Original plans were compared with optimized plans in which LAD and LV were contoured according to the Feng et al. heart atlas. Dosimetric parameters were analyzed using the Wilcoxon signed-rank test ($p < 0.05$). Results: PTV coverage remained comparable between plans. Optimized plans significantly reduced cardiac substructure doses. LV mean dose decreased from 904 to 722 cGy ($p = 0.006$) and LV maximum dose from 3411 to 2470 cGy ($p = 0.001$). LAD mean dose decreased from 1994 to 1237 cGy, while LAD V40 reduced from 45% to 12% ($p = 0.001$). Conclusion: Contouring and optimizing LAD and LV during IMRT planning significantly reduces radiation exposure without compromising target coverage, potentially improving long-term cardiac safety

ACUTE RADIATION-INDUCED TOXICITIES IN LOCALLY ADVANCED BREAST CANCER PATIENTS RECEIVING POSTMASTECTOMY HYPOFRACTIONATED RADIOTHERAPY (43.5 GY IN 15 FRACTIONS): A PROSPECTIVE SINGLE-INSTITUTIONAL EXPERIENCE

By Dr. FARIAH TABBASUM

Title:Acute Radiation-Induced Toxicities in Locally Advanced Breast Cancer Patients Receiving Postmastectomy Hypofractionated Radiotherapy (43.5 Gy in 15 Fractions): A Prospective Single-Institutional Experience Background: Breast cancer is the most commonly diagnosed malignancy among women worldwide and represents a major public health burden in Pakistan, where a large proportion of patients present with locally advanced disease. Postmastectomy radiotherapy (PMRT) significantly reduces locoregional recurrence and improves survival. Moderate hypofractionated radiotherapy has emerged as an effective alternative to conventional fractionation, offering shorter treatment duration and improved resource utilization. However, most hypofractionation trials primarily involved

early-stage breast cancer patients undergoing breast-conserving surgery, and evidence regarding toxicity profiles in the postmastectomy setting remains limited. Acute radiation-induced toxicities, including dermatitis, dysphagia, pneumonitis, and chest wall pain, may affect treatment tolerance and quality of life. Objectives: To evaluate the frequency and severity of acute radiation-induced toxicities in locally advanced breast cancer patients receiving hypofractionated PMRT (43.5 Gy in 15 fractions) and to assess their association with relevant dosimetric parameters. Methods: This prospective single-arm observational study will be conducted at the Department of Radiation Oncology, Sindh Institute of Urology and Transplantation (SIUT). Sixty female patients aged ≥18 years with histologically confirmed stage III breast cancer who have undergone mastectomy and are planned for adjuvant hypofractionatedPMRT will be enrolled through consecutive sampling. Radiotherapy will be delivered to the chest wall with or without supraclavicular/axillary nodal irradiation according to institutional protocols. Acute toxicities will be assessed weekly during radiotherapy and up to 12 weeks post-treatment using RTOG toxicity criteria. Dosimetric parameters from treatment plans will be analyzed to evaluate their association with toxicity outcomes. Conclusion: This study aims to provide institutional data on the acute toxicity profile of hypofractionated PMRT in locally advanced breast cancer and may help optimize treatment planning and safe implementation of shorter radiotherapy schedules in resource-limited settings.

A NATIONAL RADIOTHERAPY STRATEGY FOR PAKISTAN: SPEED, SCALE, AND SMART CHOICES

DR. MUHAMMAD ANAS TAHSEEN ASAR

Title: A National Radiotherapy Strategy For Pakistan: Speed, Scale, And Smart Choices A. Jamshed, A. Tahseen Background: Pakistan faces a growing cancer burden with approximately 200,000 new cases diagnosed annually, many presenting with locally advanced disease where radiotherapy plays a central role in treatment. However, national radiotherapy capacity remains limited. According to the IAEA Directory of Radiotherapy Centres (DIRAC), Pakistan currently operates fewer than 60 megavoltage radiotherapy units—including approximately 26 linear accelerators and 31 cobalt-60 machines—for a population exceeding 240 million, resulting in less than one unit per million people. Workforce shortages further compound this gap, with roughly 300 radiation oncologists and fewer than 200 medical physicists nationwide. Radiotherapy demand is substantial, with breast cancer alone accounting for nearly 40–45% of the treatment workload in many centers. Discussion: Addressing this disparity requires a national radiotherapy strategy focused on capacity, efficiency, and equitable access. Evidence-based hypofractionation offers an immediate opportunity to expand treatment capacity while maintaining clinical outcomes. Randomized trials have demonstrated the safety and effectiveness of shorter treatment schedules, particularly in breast cancer. Operational reforms such as standardized treatment protocols and extended treatment hours could further improve machine utilization. Expansion of services through a hub-and-spoke model may allow regional centers to deliver high-volume treatments while tertiary hubs support complex planning and quality assurance. Conclusion: For Pakistan, strengthening radiotherapy infrastructure should prioritize scalable technologies, hypofractionated treatment approaches, and workforce development. A strategy centered on efficiency and access, rather than technological prestige, offers the greatest opportunity to expand cancer care capacity and improve patient outcomes.

TREATMENT PATTERNS AND LONG-TERM SURVIVAL OUTCOMES IN MUSCLE-INVASIVE BLADDER CANCER: A DECADE-LONG SINGLE-INSTITUTION EXPERIENCE

By Dr. RAMEESHA JAHANGIR

Treatment Patterns and Long-Term Survival Outcomes in Muscle-Invasive Bladder Cancer: A Decade-Long Single-Institution Experience Background: Muscle-invasive bladder cancer (MIBC) shows aggressive behavior and varied management, particularly in low- and middle-income countries where long-term outcome data are scarce. We evaluated treatment patterns and long-term survival in a large single-institution cohort. Methods: We conducted a retrospective cohort study of 349 patients with MIBC treated between 2010 and 2020. Treatment strategies included neoadjuvant chemotherapy followed by radical cystectomy, definitive chemoradiotherapy, radiotherapy alone, upfront cystectomy, or palliative treatment. Overall survival was estimated using Kaplan–Meier analysis, with comparisons by log-rank testing and prognostic evaluation using Cox regression. Results: The median age was 57 years and 82.2% of patients were male. High-grade tumors accounted for 88.5% of cases. At last follow-up, 67.9% of patients were alive. Survival differed significantly by treatment strategy. Median overall survival was not reached in curative-intent groups, whereas palliative therapy showed inferior outcomes with median survival of 30 months. On multivariate analysis, stage IV disease and palliative treatment were independently associated with worse survival. Conclusion: These findings suggest that, in a real-world LMIC setting, appropriately selected patients undergoing bladder-preserving chemoradiotherapy can achieve survival outcomes comparable to radical cystectomy. Disease stage and treatment intent remain the strongest determinants of prognosis and should guide treatment selection across similar settings worldwide in practice.

CLINICOPATHOLOGICAL CHARACTERISTICS AND SURVIVAL OUTCOMES OF ENDOMETRIAL CARCINOMA: A 10-YEAR EXPERIENCE FROM A TERTIARY ONCOLOGY CENTER IN PAKISTAN

DR. MUHAMMAD ANAS TAHSEEN ASAR

Clinicopathological Characteristics and Survival Outcomes of Endometrial Carcinoma: A 10-Year Experience from a Tertiary Oncology Center in Pakistan Background: Endometrial carcinoma (EC) is an increasingly common gynecologic malignancy worldwide, with rising incidence in low- and middle-income countries. However, comprehensive data describing clinicopathological characteristics and survival outcomes from Pakistan remain limited. Methods: We conducted a retrospective cohort study of 867 women aged ≥18 years with histologically confirmed EC treated at Shaukat Khanum Memorial Cancer Hospital and Research Centre between 2010 and 2020. Clinical, pathological, treatment, and outcome data were extracted from electronic medical records. Survival outcomes were analyzed using Kaplan–Meier methods, and prognostic factors were evaluated using Cox proportional hazards regression. Results: The mean age was 55.3 years (SD 11.3), with 59.7% of patients younger than 60 years. Obesity was common (mean BMI 32.6 kg/m²). Adenocarcinoma was the predominant histology (71.7%), followed by clear cell carcinoma (14.8%) and uterine sarcomas (13.5%). Early-stage disease (FIGO I) was present in 66.6% of patients, while deep myometrial invasion (>50%) occurred in 51.1%. Surgery was performed in 94.6% of cases, with frequent use of adjuvant therapy. After a median follow-up of 49 months, the 10-year overall survival was 76.5%. Multivariate analysis identified age ≥60 years, sarcoma histology, advanced stage, positive nodal status, poor ECOG performance status, lack of surgery, and disease relapse as independent predictors of worse survival. Conclusion: Prognostic determinants in Pakistani EC patients are consistent

with international data, although younger age at diagnosis and high obesity prevalence highlight regional differences requiring context-specific management strategies.

CHEMORADIATION FOR ESOPHAGEAL CANCER IN A RESOURCE-LIMITED SETTING: ACUTE TOXICITY, DOSIMETRY, AND CLINICAL OUTCOMES FROM A SINGLE-INSTITUTION EXPERIENCE

By Dr. Esha Khalid

Title: Chemoradiation for Esophageal Cancer in a Resource-Limited Setting: Acute Toxicity, Dosimetry, and Clinical Outcomes from a Single-Institution Experience Background: Chemoradiotherapy is standard treatment for locally advanced esophageal cancer, but acute toxicity remains a major challenge in resource-limited settings. This study evaluated the incidence, severity, and predictors of treatment-related toxicities and assessed dosimetric parameters and early clinical outcomes. Methods: In this prospective single-institution study conducted from January to December 2025, patients with histologically confirmed T2–T4, node-positive, or unresectable esophageal carcinoma received radical chemoradiotherapy (41.4–54 Gy in 23–27 fractions) with weekly carboplatin and paclitaxel. Toxicities were assessed weekly using CTCAE criteria, and dosimetric parameters were derived from dose–volume histograms. Logistic regression analysis was performed to identify predictors of severe esophagitis. Results: Among 105 patients (mean age 44.3±10.6 years), esophagitis (100%) and fatigue (92.4%) were most frequent. Grade ≥2 esophagitis occurred in 82.9% and Grade 3 in 38.1%. Hematologic toxicities included anemia (69.5%), thrombocytopenia (40%), and neutropenia (22.9%). Mean weight loss during treatment was 3.4±3.08 kg. Higher baseline weight significantly reduced risk of severe esophagitis (OR 0.93/kg, $p<0.001$). Adequate target coverage was achieved (mean PTV V95% 97.16%). Sixty percent underwent surgery, with 36.2% pathological complete response. Conclusion: Acute toxicity was predominantly mucosal and hematologic. Nutritional optimization, careful treatment planning, and close monitoring may improve tolerance and outcomes during chemoradiotherapy in practice.

Institutional Approach to Homogeneous Craniospinal Irradiation in Paediatric Medulloblastoma to Minimize Spinal Growth Asymmetry

By Dr. FABIHA SHAKEEL

Introduction: Medulloblastoma is the most common malignant paediatric brain tumour, accounting for nearly 30% of central nervous system tumours in the first decade of life. Craniospinal irradiation (CSI) is a key component of treatment; however, uneven radiation dose across vertebral bodies may cause spinal growth asymmetry and long-term deformities. CSI planning must therefore ensure adequate target coverage while maintaining homogeneous vertebral dose distribution, particularly in pre-pubertal children. According to SIOPE guidelines, significant bone growth impairment is associated with doses exceeding 15 Gy in children aged 2–6 years and 35 Gy in older children. Methods: We retrospectively reviewed CSI plans of six paediatric patients with standard-risk medulloblastoma treated between 2023 and 2025. Patients aged 4–9.5 years received 23.4 Gy CSI. Target volumes were contoured using SIOPE guidelines, and vertebral bodies were analysed as organs at risk. Planning aimed to minimise vertebral dose gradients. Results and Conclusion: Vertebral dose gradients were maintained at approximately 1800 cGy in all patients, achieving 99% homogeneity in those under six years. Guideline-based CSI planning can achieve homogeneous vertebral dosing and may reduce the risk of late spinal deformities.

An Institutional Experience of Stereotactic Radiosurgery and Stereotactic Body Radiotherapy in the Management of CNS Tumors and Metastases.

By Dr. FABIHA SHAKEEL

Background: Stereotactic Radiosurgery (SRS) and Stereotactic Body Radiotherapy (SBRT) has become an integral component of treatment for patients with limited brain or spine metastases as well as a curative treatment option for grade 1 meningioma and vetibular schwannomas offering precise, high-dose radiation delivery while sparing adjacent normal tissue. We report our institutional experience and early clinical outcomes of SRS in patients with metastatic brain,spinal lesions, grade 1 meningioma and vestibular schawannomas. Methods: A retrospective analysis was conducted of 17 patients who underwent fractionated SRS/ SBRT between september 2023 till june 2025 for metastatic lesions of brain (n=13) ,spine (n=2), as well as evaluating the effictiveness of SRS in post-op grade 1 meningioma (n=1) and post-op vestibular schwanoma (n=1). Metastatic Patients were selected based on good performance status, controlled extracranial disease, and limited metastatic burden (≤5 lesions). Treatments were delivered using image-guided SRS systems. Brain lesions received a median fractionated dose of 30Gy in 5fractions, while spinal lesions were treated with a median dose of 32.5 Gy in 5 fractions (6.5 Gy per fraction). SRS Doses for meningioma and vestibular schwannoma were 25Gy/5 and 18Gy/3 fractions respectively. Clinical evaluation and MRI were performed at 3-month intervals to assess local control, symptom response, and toxicity. Results: The median age of the cohort was 54 years (range: 32–71). The most common metastatic tumors were gynaecological and genitourinary malignancies (40%), followed by breast cancer (33.3%) and lung cancer (13.3%), while sarcoma and salivary duct carcinoma each accounted for 6.7% of the total 17 cases. Additionally, two postoperative cases, one of grade I meningioma and one of vestibular schwannoma were included. The median treated lesion volume was 4.2 cc. At a median follow-up of 6 months, local tumor control was achieved in 85% of treated lesions. Neurological or pain improvement was observed in 60% of symptomatic patients. Two deaths occurred due to systemic disease progression. Treatment was well tolerated, with mild acute toxicities (headache, grade 2 dermatitis and fatigue) in 25% of patients and no ≥ Grade 3 adverse events observed. The patient treated for postoperative vestibular schwannoma showed stable disease at 3 months follow-up. Conclusion: Our early institutional experience indicates that SRS and spine SBRT are safe, effective and convenient treatment options for patients with limited brain and spinal metastases, as well as for curative treatment of vestibular schwannomas and grade I meningiomas. These techniques provide excellent local control, meaningful symptom relief, and minimal toxicity, supporting their integration into multidisciplinary oncologic care.

An Institutional Experience of Unplanned Radiotherapy Treatment Interruptions in Pediatric Soft Tissue Sarcoma

By Dr. Fabiha Shakeel

Background: Radiation therapy (RT) is an essential component in the management of pediatric sarcomas and is commonly delivered with intensive chemotherapy. Unplanned RT interruptions may compromise tumor control, particularly in rapidly proliferating tumors such as Ewing sarcoma and rhabdomyosarcoma (RMS). Children receiving combined-modality therapy are vulnerable to treatment-related toxicities that can result in delays. However, data on the frequency, duration, and causes of RT interruptions in pediatric sarcoma remain limited. Methods: We conducted a retrospective review of 19 pediatric patients treated with curative-intent RT for sarcoma at our institution, including 9 patients with Ewing sarcoma (47.4%) and 10 with RMS (52.6%). On-treatment delay was defined

as any unplanned interruption after RT initiation. Data on delay occurrence, duration, and causes were extracted from treatment records and summarized using descriptive statistics. Results: Eight patients (42.1%) experienced treatment delays, totaling 63 interrupted treatment days. Delays were more frequent in Ewing sarcoma than RMS (55.6% vs 30%). Among affected patients, the mean delay was 7.9 days (median 9 days). Hematologic and infectious complications, including febrile neutropenia and thrombocytopenia, were the most common causes. Other reasons included acute RT toxicity, hospital admissions for supportive care, and temporary unfitness for anesthesia. Conclusion: RT interruptions were frequent, particularly in Ewing sarcoma, and were mainly related to treatment-related toxicity and supportive care needs. Improved supportive management and coordination between oncology teams may help minimize treatment delays.

Pre-Treatment Patient Review in Pediatric Radiation Oncology: Enhancing Treatment Quality and Preventing Unnecessary Delays

By Dr. Fabiha Shakeel

Introduction: Radiation therapy (RT) in children requires careful coordination due to narrow therapeutic margins, the need for anesthesia in younger patients, and the frequent use of concurrent systemic therapy. Pre-treatment clinical review is essential to confirm readiness for RT and to identify issues that may compromise safety or lead to unplanned treatment interruptions. This study evaluated the findings identified during pre-radiotherapy clinical review in a pediatric radiation oncology setting and their potential impact on treatment delivery. Methods: We prospectively reviewed 15 pediatric patients scheduled for curative-intent RT between November and December 2025. Pre-treatment assessment was performed by the treating physician or resident before the first RT fraction. The review included evaluation of imaging completeness, disease status, surgical wound condition, anesthesia fitness, and supportive care requirements. Identified issues were documented and appropriate actions were taken prior to treatment initiation. Results: Clinically significant findings were identified in 7 of 15 patients (46.7%). These included absence of a planned feeding tube in head and neck rhabdomyosarcoma, incomplete post-chemotherapy imaging in pelvic RMS, disease progression or marked tumor regression requiring repeat CT simulation and replanning, and a surgical site infection requiring antibiotics. One patient with Askin's tumor required medical optimization due to fever and respiratory symptoms before RT. Conclusion: Nearly half of patients had actionable issues identified during pre-RT review. This structured process enabled timely intervention, treatment modification, and improved treatment safety while reducing the risk of avoidable interruptions.

IMPACT OF ADDITION OF DIRECT ANTIVIRAL AGENTS (DAA's)WITH SORAFENIB ON CLINICAL OUTCOMES OF PATIENTS WITH HEPATITIS C INDUCED HEPATOCELLULAR CARCINOMA(HCC)

By Dr. MARYAM ABID

BACKGROUND: Hepatocellular Carcinoma (HCC) is primarily a problem of developing regions. Contrary to the international trend observed for HCC patients, in Pakistan, Hepatitis C is the commonest cause in up to 58% patients and Hepatitis B being 2nd commonest in 25.3% patients as the runner-up. Rationale of this study was that if Hepatitis C is an independent risk factor for HCC via cirrhosis, then controlling the Hepatitis C viral load via DAA's may halt the progression and may improve clinical outcomes in patients of Hepatitis C induced HCC. METHODOLOGY: Patients' data was recruited from Oncology Department, Mayo Hospital Lahore, Pakistan retrospectively. Patients were divided in two arms, arm A received sorafenib 800mg/day along

with Sofosbuvir 400mg/day+ Ribavirin 800 mg/day, arm B received only Sorafenib. RESULTS: Total of 200 patients were recruited, with 61% males and 39% females in arm A, whereas equal percentage of males and females in arm B (50%), with mean age of 57± 9.36 in arm A while 56±9.23 in arm B. On response evaluation at 6 months 19 patients among Arm A had partial response (PR), 45 patients had stable disease (SD) as compared to arm B in which 8 patients had PR and 21 patients had SD. No patient achieved complete response in any arm. Survival analysis showed that overall survival (OS) over period of 3 years in combination therapy arm was 12 vs 7.5 months in arm B (p value =0.00). significant difference in Progression free survival (PFS) was observed in both arms (7 vs 5 months, p value= 0.00). CONCLUSION: Adding DAA's with sorafenib in hepatitis C induced HCC prolongs the OS by 4.5 months and PFS by 2 months.

EVALUATION OF RADIATION-INDUCED ACUTE ADVERSE EFFECTS IN PELVIC MALIGNANCIES AMONG MALES

By Dr. SAAD JAMAL

EVALUATION OF RADIATION-INDUCED ACUTE ADVERSE EFFECTS IN PELVIC MALIGNANCIES AMONG MALES Authors: Saad jamal, Furrukh ashraf, Jawaid.a.mallick, Quratulain badar Ziaudin Hospital Background: Radiotherapy is a key treatment modality for male pelvic malignancies, particularly prostate, rectal, and bladder cancers. Acute radiation-induced toxicities may compromise patient comfort and treatment adherence. Objective: To evaluate the incidence and severity of acute adverse effects in male patients undergoing pelvic radiotherapy. Methods: This observational study included male patients receiving external beam radiotherapy for pelvic malignancies. Acute toxicities occurring during treatment and within 90 days of completion were assessed using the Common Terminology Criteria for Adverse Events (CTCAE) version 5.0. Gastrointestinal (GI), genitourinary (GU), dermatologic, and hematologic toxicities were recorded and graded. Associations with clinical and treatment-related factors were analyzed. Results: The most frequently observed toxicities were Grade I–II gastrointestinal symptoms, including diarrhea and proctitis, and genitourinary symptoms such as dysuria, frequency, and urgency. Dermatologic reactions were generally mild. Grade III toxicities were uncommon and manageable with supportive care. Increased toxicity was associated with higher radiation dose and concurrent chemotherapy, while advanced techniques such as IMRT showed a lower incidence of moderate GI toxicity. Conclusion: Acute radiation-induced adverse effects in male pelvic malignancies are typically mild to moderate and manageable. Careful monitoring and use of advanced radiotherapy techniques can help minimize toxicity and improve treatment tolerance.

Weekly assessment of acute oral mucositis on Concurrent Chemo radiotherapy in oral cavity cancers

By Dr. SAAD JAMAL

Weekly assessment of acute oral mucositis on Concurrent Chemo radiotherapy in oral cavity cancers Authors: Saad jamal, Furrukh ahsraf, Jawaid.a.mallick, Quratulain badar Background: Oral mucositis (OM) is a common and debilitating side effect seen in patients with head and neck squamous cell carcinoma (HNSCC) undergoing radiation therapy (RT) in combination with chemotherapy. Methods: A descriptive study conducted at Department of Oncology, Dr Ziauddin University Hospital from September 2020 to December 2021. Patients with SCC of oral cavity with age more than 18 years up to 70 years planned for radiation therapy as adjuvant (after surgery) with chemotherapy. The severity of mucositis was evaluated on weekly basis during the treatment according to RTOG/EORTC criteria of adverse events. The severity of mucositis was compared with age below and above 45 years of age and Gender. Results: Total of 126 patients were included in the study during the study period. At week 07, the patients aged <45 years showed that Grade 3

radiation induced oral mucositis constitute the highest proportion, i.e. 74.4% followed by Grade 4 (23.3%) and Grade 2 (2.3%) oral mucositis, which seems similar to the oral mucositis grades in patients who are >45 years of age. The p-value (0.783) indicates that the observed differences in grade distribution between the age groups are not statistically significant. At week 07, the percentage of Grade 3 XRT induced oral mucositis is higher than Grade 4 and Grade 2 oral mucositis in both female and male patients. The p-value (0.979) indicates that the observed differences in grade distribution between genders are not statistically significant. Conclusion: Future research should focus on incorporating larger sample sizes, external validation, clearly defined predictors and outcomes, and detailed reporting to strengthen evidence on oral mucositis in patients with head and neck squamous cell carcinoma (HNSCC).

TOTAL NEOADJUVANT DUAL HER2 BLOCKADE WITH RESPONSE-ADAPTED ESCALATION IN HER2-POSITIVE INFLAMMATORY BREAST CANCER: A CASE REPORT

By Dr. Ahmad Walid Kasserwani

TOTAL NEOADJUVANT DUAL HER2 BLOCKADE WITH RESPONSE-ADAPTED ESCALATION IN HER2-POSITIVE INFLAMMATORY BREAST CANCER: A CASE REPORT Ahmad Kasserwani, MD Department of Hematology & Oncology, Lebanon Background: Inflammatory breast cancer (IBC) is a rare, aggressive subtype of breast cancer, often presenting with erythema, edema, and dermal lymphatic invasion. HER2-positive IBC has poor prognosis, but modern targeted therapy significantly improves outcomes. Case Presentation: A 34-year-old female presented with rapid-onset erythema and peau d'orange of the left breast with ipsilateral axillary lymphadenopathy. Core biopsy revealed invasive ductal carcinoma, ER-/PR-, HER2 3+, Ki-67 75%. Clinical staging: cT4dN1M0. Management: The patient received six cycles of neoadjuvant docetaxel, carboplatin, trastuzumab, and pertuzumab (TCHP regimen). Clinical and radiologic response was excellent. Surgery (modified radical mastectomy with axillary dissection) showed minimal residual disease (RCB-I). Given residual disease, adjuvant therapy was escalated to trastuzumab emtansine (T-DM1) for 14 cycles, followed by radiotherapy. Outcome: The patient remains disease-free at 12 months with preserved cardiac function. Conclusion: Dual HER2 blockade in the neoadjuvant setting, followed by response-adapted escalation with T-DM1, can achieve excellent outcomes in HER2-positive IBC. Early recognition and a multidisciplinary approach are crucial in aggressive breast cancer subtypes.

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mastectomy with axillary dissection) showed minimal residual disease (RCB-I). Given residual disease, adjuvant therapy was escalated to trastuzumab emtansine (T-DM1) for 14 cycles, followed by radiotherapy. Outcome: The patient remains disease-free at 12 months with preserved cardiac function. Conclusion: Dual HER2 blockade in the neoadjuvant setting, followed by response-adapted escalation with T-DM1, can achieve excellent outcomes in HER2-positive IBC. Early recognition and a multidisciplinary approach are crucial in aggressive breast cancer subtypes.

COMPLETE REMISSION RATE IN ADVANCED STAGE DIFFUSE LARGE B-CELL LYMPHOMA FOLLOWING TREATMENT WITH R-CHOP

By Dr. FARYAL AZHAR

Abstract Objective: To evaluate the complete remission (CR) rate in patients with advanced-stage DLBCL following treatment with R-CHOP. Study Design: Descriptive Cases-series study. Setting: The Institute of Nuclear Medicine and Oncology (INMOL) in Lahore. Period: 16th May 2025 to 16th October 2025. Methods: Conducted on 60 patients diagnosed with stage III or IV DLBCL and treated with six cycles of R-CHOP chemotherapy at a tertiary care oncology unit were included in this observational study. Demographic baseline data, clinical record, and laboratory data were taken, such as age, gender, performance status, and stage of disease. The clinical evaluation and imaging assessment were used to evaluate response to treatment based on standard response criteria after therapy. Results: The average age of the patients was 44.17±12.85 years, and the patients were mostly men (61.7%). Over fifty percent of the patients (55) had stage III disease and forty five percent had stage IV disease. After six cycles of R-CHOP, the complete remission rate was 68.3 and partial remission of 21.7 and disease progression of 10 percent were seen. The CR rate in this study is also in line with other reports found in the literature that range between 65 and 75% of advanced-stage DLBCL. Conclusion: R-CHOP chemotherapy is a viable first-line therapy in achieving a high percentage of complete remissions in the advanced stage of DLBCL. However, a subset of patients unable to gain complete remission, which underlines the necessity to detect high-risk cases early and possibly to include new targeted or improved treatment methods.

QUALITY OF LIFE IN PATIENTS WITH APLASTIC ANEMIA RECEIVING ALLOGENEIC BONE MARROW TRANSPLANTATION

By Dr. ZAHID KHAN ZADA

1.Background: Standard first-line treatment for newly diagnosed severe aplastic anemia patients is allogeneic hematopoietic stem cell transplant in the presence of suitable donor and horse anti-thymocyte globulin, ciclosporin, eltrombopag for patients lacking a donor. 2.Objectives: To assess quality of life in patients who received allogeneic hematopoietic stem cell transplant from matched related donors (MRD) in a low-middle income country. 3.Study Design: This single-center retrospective study included 68 patients who received MRD allogeneic hematopoietic stem cell transplant between 2015 and 2024. WHOQOL-BREF was used to assess quality of life. Statistical analysis was done using SPSS version 27. 4.Results: Median age at the time of transplant was 21.5 (range: 9-48) years consisting of 57 (83.8%) males and 11 (16.2%) females. Median CD34 stem cell dose infused was 4.98 (range: 1.53–14.58) × 10^6 cells/kg. Neutrophil and platelet engraftment were achieved on median of day +13 (range: 9–25) and day +22 (range: 14–71) respectively. Frequent complications included cytomegalovirus reactivation in 21 (30.9%) and graft-versus-host disease (Grade II-IV/Extensive) in 19 (27.9 %) patients. Median duration from transplant to assessment of quality of life was 2573 (range: 386-4992) days. Mean quality of life scores were 86.13 (±18.42) in physical, 82.04 (±19.65) in psychological, 75.73 (±18.36) in social relations and 75.14 (±17.71) in environmental domains. Increasing recipient age showed negative correlation with quality of life scores

in physical (r = -0.2, p < 0.05), psychological (r = -0.1) and environmental (r = -0.2) domains. Increasing donor age had negative impact on recipient's quality of life in all domains while statistical significance was seen only in environmental domain (r = -0.2, p < 0.05). Male recipients reported significantly higher psychological (p = 0.01) and environmental (p = 0.01) scores, with better scores in physical (p = 0.12) and social relations (p = 0.37) domains. Recipients who received bone marrow harvest alone exhibited superior quality of life scores in physical (p = 0.44), psychological (p = 0.93) and social relations (p = 0.02). Chronic graft-versus-host disease had significant adverse impact on quality of life in physical (p = 0.07) domain with lower scores in psychological (p = 0.48), social relations (p = 0.33) and environmental (p = 0.0.34) domains. Patients with cytomegalovirus reactivation had significantly worse psychological scores (p = 0.03) and physical (p = 0.06) and environmental (p = 0.06) scores. 5.Conclusion: Allogeneic hematopoietic stem cell transplant is curative treatment for aplastic anemia and patients report good long-term quality of life, transfusion independence and normal daily activities. Younger recipient and donor age, male gender and bone marrow harvest as stem cell source were associated with better quality of life. Cytomegalovirus reactivation was associated with lower quality of life scores. Chronic graft versus host disease was a major detriment to quality of life, underscoring the need for its prevention and management strategies. These results advocate for allogeneic hematopoietic stem cell transplant as preferred therapeutic approach in eligible aplastic anemia patients, given its dual benefits of curative potential and good long term quality of life.

IMPACT OF DAILY VS. WEEKLY PEER REVIEW ON TARGET VOLUME DELINEATION AND PLAN REVISIONS.

By Dr. LARAIB KHAN

In this study, the impact of daily PRMs on radiation oncology planning was assessed by analyzing changes suggested during these meetings. Treatment plans for 249 patients were reviewed from April to September 2022. During PRMs, each plan was reviewed and modifications were categorized as no change, minor change, major change, or missing contour, with further stratification by target volumes, treatment field, radiation doses and treatment decisions. RESULTS: A total of 249 cases were reviewed. Larger volume of discussed plans comprised of head & neck cancers (n= 79, 31.7%), thorax (n=55, 22.1%) followed by brain and pelvis (each n=39, 15.7%). Most of the plans i.e., 190 (76.3%) were based on IMRT/VMAT. PRM changes were suggested in 114 (45.7%) cases, where 78 (31.3%) were minor and 36 (14.5%) were major changes. In most cases the changes were suggested in CTV i.e., 62 (24.9%) while PTV was suggested modifications in 21 (8.4%) of the cases during PRM discussion. Among all, head and neck was the region with most frequent PRM changes, suggestions 53 (57.6%) followed by pelvis 18 (19.5%). CONCLUSION: Peer review is a vital component of quality assurance in radiation oncology, helping to identify and correct potential errors, standardize care, and enhance patient safety. It also promotes multidisciplinary collaboration and serves as a valuable educational tool, ultimately supporting more effective and individualized treatment.

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By Dr. JAWAD LATIF

ABSTRACT Background: Cisplatin based chemotherapy both in induction and concurrently with radiation has been the standard of care in head and neck squamous cell carcinoma patients, but its use in certain population is frequently limited by significant toxicity, reduced compliance, poor tolerance and treatment interruptions, ultimately compromising the disease control. Alternatively, Carboplatin-Paclitaxel based chemotherapy in induction and concurrently with radiation, appears to be better tolerated and may provide superior tumor control. To investigate tumor response, determining clinical and radiological response and to evaluate disease free survival and progression free survival. Materials and Methods: In this single arm prospective study, 73 patients with non-metastatic hypopharyngeal squamous cell carcinoma were enrolled in the study over 6 months, Patients were offered Carboplatin-Paclitaxel based induction chemotherapy followed by concurrent chemoradiation with same chemotherapy regimen weekly, Treatment Tolerance, Compliance and Toxicity were recorded at regular intervals. Acute toxicities (within 90 days of the start of treatment) and late toxicities at 6, 12 and 18 months from the end of chemo radiation were assessed and recorded as per RTOG and CTCAE grading criteria. Treatment response was assessed by Clinical examination and Radiological evaluation and recorded as per RECIST criteria. Survival outcome at 12 and 18 months post completion of treatment, including Disease free survival and Progression free survival were analyzed and documented. Results: Out of 73 patients 16 were excluded, either planned for alternative/palliative `

treatment as per their clinical demand or failure to attend planned sessions. 57 evaluable patients receive the desired treatment and responses are evaluated as given; Complete clinical and radiological response (CR) was observed in 29 patients (50.87%). Partial Response (PR) is noted in 8 Patients (14.03%). Stable disease is noted in 12 patients (21.05%), while Progressive disease occurred in 8 Patients (14.03%). No of Alive patients at the last follow up were 35 patients (61.4%, 95% CI 48.4-72.9), 12 patients (21.1%, 95% CI 12.5-33.3) have died, and 10 patients (17.54%, 95% CI 9.8-29.4) were lost to follow up. The median progression-free survival (PFS) and Disease-free survival (DFS) were 58.5 months and 58.7 months respectively, the 12 and 18 months PFS were 85.3% and 80.0%, while the DFS at 12 and 18 months were 87.4% and 82.2% respectively. Among 57 patients, Acute Skin toxicities were seen in 36 patients (63.16%), Acute dysphagia in 38 patients (66.66%) Mucositis was observed in 44 patients (77.19%), While Xerostomia was noted in 25 patients (43.85%) as late toxicity. Conclusion: Carboplatin-Paclitaxel based chemotherapy both in induction and concurrently with radiation appears to be a tolerable and effective treatment approach and can serve as a viable alternative for patients with Hypopharyngeal squamous cell carcinoma patients. Keywords: Chemoradiation, head and neck cancer, hypopharyngeal squamous cell carcinoma, Induction chemotherapy.

SMALL BOWEL DOSE PARAMETERS AND ACUTE TOXICITY IN PATIENTD WITH LOCALLY ADVANCED RECTAL CANCER TREATED WITH NEOADJUVANT CHEMORADIATION

By Dr. SIMRA QURESHI

SMALL BOWEL DOSE PARAMETERS AND ACUTE TOXICITY IN PATIENTD WITH LOCALLY ADVANCED RECTAL CANCER TREATED WITH NEOADJUVANT CHEMORADIATION Authors: Dr. Simra Qureshi (MINAR CANCER HOSPITAL / SHAUKAT KHANUM HOSPITAL) Background: Acute gastrointestinal (GI) toxicity is common in patients treated with pelvic radiotherapy (RT) and small bowel is a dose-limiting organ at risk (OAR). The relationship between the irradiated volume of small bowel and the degree of acute toxicity has been well recognized but not well quantified using intensity modulated radiotherapy (IMRT). The objective of this study is to investigate the correlation between the radiation dose received by small bowel and the incidence of acute lower GI toxicities, and to identify dose parameters that may reduce toxicity risk. Methods: One hundred patients diagnosed with locally advanced rectal cancers and received RT with IMRT technique were analyzed in this prospective observational study. The peritoneal cavity was delineated as per Radiation Therapy Oncology Group (RTOG) consensus guidelines. The volume of peritoneal cavity receiving 5, 10, 15, 20, 25, 30, 35, 40 and 45 Gy were analyzed. Grades of acute GI toxicities were assessed weekly according to CTCAE criteria. The odds of developing GI toxicities were analyzed using a logistic regression test. Results: Grade 3 or more small bowel toxicity occurred in 12% of patients in the study. A highly significant dose-volume relationship between peritoneal space irradiation and acute small bowel toxicity was observed. The greatest sensitivity for predicting toxicity was associated with the volume receiving 5Gy. Conclusion: DVH analysis of peritoneal space volumes accurately predicts grade 3 or more acute small bowel toxicity in patients with rectal cancer treated with neoadjuvantchemoradiation. This study suggests that a peritoneal space V5 Gy highly correlates with grade 3 toxicity.

Determination Of Frequency Of Extravasation Of Chemotherapy In Cancer Patients.

By Dr.SIDRA NOUREEN

INTRODUCTION Extravasation of chemotherapy is a feared complication of anticancer therapy. The accidental leakage of cytostatic agents into the perivascular tissues may have devastating

short-term and long-term consequences for patients. Most chemotherapeutic agents can cause varying degrees of local tissue injuries when extravasated. OBJECTIVES To find out frequency of extravasation of chemotherapy in cancer patients. STUDY DESIGN Descriptive case series SETTING Department of Oncology, King Edward Medical University, Mayo Hospital, Lahore. DURATION OF STUDY WITH DATES Study was carried out over a period of six months from 09-02-2019 to 08-08-20192 SUBJECTS AND METHODS A total of 215 patients of any malignant carcinoma were included in the study. Chemotherapy was started and patient followed for 7 days as per operational definitions) All extravasations occurring were documented. RESULTS Age range of the patients was 18-60 years with mean age 42.7±9.4 year. Majority of the patients was females 120 (55.8%) and males were 95 (44.2%). Mean BMI was 22.8±5.8 kg/m2. Out of 215 cases, 92 belonged to vesicant class of drug while remaining 123 (57.2%) belonged to irritant class of drug. Patients by stage of disease showed, 25 patients (11.6%) had stage 1 of disease, 58 patients (27%) had stage 2, 67 patients (31.2%) had stage 3 while 65 patients (30.2%) had stage 4. There were 104 patients (48.4%) with performance status 1 and 111 patients (51.6%) with performance status 2. Frequency of extravasation of chemotherapy in cancer patients was found to be 15 (7%). Out of these 15 cases of extravasation of 3 chemotherapy, their grades were as follows: 4 patients of grade 1, 6 patients of grade 2 and 5 patients of grade 3. Hypertension found in 38 patients (17.7%), diabetes in 41 patients (19.1%), IHD in 25 patients (11.6%) and hepatitis in 40 patients (18.6%). Stratification for age, gender, class of drug and comorbidities was carried out. CONCLUSION In conclusion, the incidence of extravasation among chemotherapy patients was 7% with a well trained multidisciplinary team using the in-house chemotherapy guideline in Chemotherapy Clinic. KEY WORDS Malignant carcinoma, Extravasations, Chemotherapy

such as individualized tandem angulation or early use of combined intracavitary–interstitial techniques to maintain cumulative CTV-HR doses ≥ 85 Gy EQD2.

DEFINITIVE CHEMORADIOTHERAPY OUTCOMES IN CERVICAL ESOPHAGEAL CARCINOMA: A SINGLE INSTITUTION EXPERIENCE

By Dr. MUHAMMAD ABDULLAH NASIR

Background: Cervical esophageal carcinoma accounts for 2–10% of all esophageal cancers. Definitive chemoradiotherapy is the preferred treatment. This study reviews treatment outcomes in patients with CEC treated at a tertiary care university hospital. Methods: A retrospective review was conducted of patients aged >18 years diagnosed with squamous cell carcinoma of cervical esophagus undergoing CRT at Aga Khan University Hospital between 2011-2024. Results: Twenty-five patients were identified. Thirteen patients received definitive chemoradiotherapy at our institution and were included in this analysis. Chemotherapy regimens included Cisplatin/5-Fluorouracil (n=5), Carboplatin + Paclitaxel (n=6), Cisplatin alone (n=2). Radiotherapy doses ranged from 5040–7000 cGy (median 6400), delivered using VMAT (n=8), IMRT (n=2), or 3DCRT (n=3) techniques. Complete response was achieved in 9 patients, 4 had progressive disease. 3 out of 9 developed local recurrence. At a median follow-up of 15 months (range, 3–58 months), 6 were alive without disease, 2 were alive with disease, 2 died of progression, and 3 experienced treatment-related mortality (TRM). All TRM cases occurred in patients who received cisplatin/5-fluorouracil–based CRT. Conclusion: Chemoradiotherapy with Carboplatin + Paclitaxel and a radiotherapy dose (≥66 Gy) was associated with improved survival. Our cohort suggests a dose–response relationship.

Acknowledgment of Industry Collaboration

The successful conduct of ONCO 2026 – the 27th Annual Cancer Congress of the Pakistan Society of Clinical Oncology (PSCO) was supported through responsible and structured collaboration with the healthcare industry, in alignment with the scientific and educational objectives of the congress.

A total of 28 industry partners contributed to ONCO 2026, representing a broad spectrum of the healthcare sector, including pharmaceutical and biopharmaceutical organizations, diagnostics and molecular pathology services, medical technology and radiotherapy solution providers, medical devices and oncology support services, as well as healthcare-focused service organizations. Their collective participation reflected a shared commitment to advancing oncology education, innovation, and patient-centered cancer care.

Industry engagement at ONCO 2026 played an important role in facilitating a comprehensive scientific program, enabling knowledge exchange on emerging therapies, diagnostics, and technologies, and encouraging constructive interaction between clinicians, researchers, and industry stakeholders. This collaboration contributed to a deeper understanding of innovations shaping contemporary oncology practice while supporting meaningful professional dialogue.

The Pakistan Society of Clinical Oncology remains firmly committed to upholding the principles of scientific integrity, transparency, and ethical collaboration. All industry engagement during ONCO 2026 was conducted in accordance with established professional and ethical guidelines, ensuring that educational content and scientific discussions remained independent, evidence-based, and focused on patient benefit.

The Editorial Board of the Journal of Clinical Oncology Pakistan (JCOP) acknowledges and appreciates the collective contribution of all 28 industry partners, whose responsible support strengthened the academic, educational, and collaborative impact of ONCO 2026 and contributed to the advancement of oncology practice in Pakistan and the region.



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