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abstract

Transforming Esophageal Cancer Care: The Promise of Concurrent Chemoradiotherapy

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Transforming Esophageal Cancer Care: The Promise of Concurrent Chemoradiotherapy

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Introduction: Esophageal cancer is highly lethal, with poor survival outcomes. Histologically, it is classified as squamous cell carcinoma or adenocarcinoma. Locally advanced cases are treated with neoadjuvant CCRT followed by surgery or definitive CCRT. This study aimed to assess overall disease response to definitive CCRT, highlighting its potential to achieve comparable outcomes to neoadjuvant CCRT with surgery while preserving the esophagus and reducing surgical morbidity.

Methodology: This prospective cohort study was conducted at Dr. Ziauddin Hospital, Karachi, Pakistan. All patients with biopsy-proven esophageal cancer were included in this study after having a PET CT scan or a contrast-enhanced CT scan of the chest, abdomen, and pelvis. The patients who met the inclusion criteria were added to the study and received CCRT. Data were gathered, including radiological and histopathological reports. The primary outcome, which is the overall response to the treatment, was analysed using SPSS v.26.0.

Results: Among 46 patients with esophageal carcinoma who underwent definitive concurrent chemo-radiotherapy (CCRT), post-treatment PET-CT assessment showed complete metabolic response (CMR) in 23 patients (50.0%), partial metabolic response (PMR) in 15 patients (32.6%), stable metabolic disease (SMD) in 6 patients (13.0%), and progressive metabolic disease (PD) in 2 patients (4.3%). Tumor histology was closely related to pathological response. All 12 patients with adenocarcinoma had residual disease, while 28 of 38 patients with squamous cell carcinoma (73.7%) achieved complete response on histopathology (CR). Among the two patients with adenosquamous carcinoma, one (50%) achieved CR, reflecting an intermediate response.

Conclusion: This study highlights the efficacy of concurrent chemo-radiotherapy (CCRT) in the treatment of esophageal cancer, demonstrating significant overall response rates. Patients with squamous cell carcinoma showed markedly better PET and complete histopathological responses, underscoring their strong radiosensitive profile. Given

these outcomes, definitive chemoradiation may represent an effective, organ-preserving alternative to neoadjuvant therapy followed by surgery in selected patients. Histology remains a key determinant of therapeutic response and should guide treatment decisions.

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