

Impact of EGFR Membranous Overexpression on Cervical Cancer Treatment Outcomes

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Abstract

Purpose: This study aimed to assess the association between pretreatment EGFR overexpression in local-regional advanced cervical cancer patients treated definitively with concurrent chemoradiation (CRT) and treatment outcomes including overall survival (OS), progression free survival (PFS), distant metastases control (DM), local-regional control (LC), and distant control (DC).

Patients and Methods: This IRB approved study included cervical cancer patients treated definitively and consecutively with CRT. Evaluation of membranous expression for EGFR was performed and scored semi-quantitatively by expert pathologists, blinded to the treatment outcomes, and incorporated both the intensity and percentage of immune-reactivity in invasive carcinoma. Treatment-outcomes were reviewed and reported.

Results: The study included 28 patients who had tissue available from the pathology core facility for immunohistochemistry. The mean patients' age was 51 ± 10 years. 53.57% of the patients had FIGO stage IIB disease. Most of the patients (78.6%) had locally advanced disease (size ≥ 4 cm) at presentation. The 5-year OS, PFS, LC, and DC were 57.2%, 48.1%, 72.1%, and 62.9%, respectively. Six (21.4%), and 20 patients (78.6%) had EGFR score <2 and ≥ 2 , respectively. EGFR overexpression was associated with worse 3-year and 5-year OS (72.8% vs. 60%, and 65.59% vs. 40%), PFS (61.83% vs. 41.6%, and 51.53% vs. 41.67%), LC (77.73% vs. 41.67%, and 77.7% vs. 41.7%), and DC (77.1% vs. 41.7% and 64.3% vs. 41.67%). However, these values did not reach a statistical significance.

Conclusion: This study demonstrated a trend that EGFR overexpression is a potential prognostic marker for local-regional advanced cervical cancer patients treated definitively with CRT.