AB023. 209. Assessment of tumour budding in pre-treatment biopsies and its impact on outcomes in locally advanced rectal cancer patients

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Background: Tumour budding is a significant prognostic indicator in rectal cancer patients, however, universal reporting is lacking. The aim of this study was to assess tumour budding in pre-treatment rectal cancer biopsies and correlate it with response to treatment and oncological outcomes.

Methods: Locally advanced rectal cancers biopsies were identified and cut for assessment. Staining for tumour budding in biopsy specimens was performed using Hematoxylin & Eosin (H&E) and Cytokeratin AE1/AE3. Resected specimens were examined for response to treatment and correlated with tumour budding. Overall and disease-free survival was assessed using Kaplan-Meier curves.

Results: Between 2005–2015, 200 biopsy specimens were available for assessment, however, following review 108 patients had adequate tissue for inclusion. Median follow up was 42 months (IQR, 28–84.5 months). Tumour budding was present in 41 biopsy samples assessed on H&E slides compared with 84 on Cytokeratin AE1/AE3. Concordance was seen in 65 biopsy specimens. Tumour budding did not predict response to treatment on H&E (P=0.383) or cytokeratin AE1/AE3 (P=0.363) assessment. Disease free survival was 80.6% for patients with absent budding and 58.5% for patients with present budding (P=0.032) assessed by H&E compared with 95.9% and 65.5% respectively (p=0.007) when assessed by cytokeratin AE1/AE3. Overall survival was 86.6% for patients with absent budding compared to 63.4% for patients with present budding assessed on H&E (P=0.059). Evaluation of Cytokeratin AE1/AE3 slides demonstrated an overall survival of 95.8% in the absent budding cohort compared to 72.6% in the present budding cohort (P=0.028).

Conclusions: Cytokeratin AE1/AE3 yields higher numbers of patients with tumour budding. Assessment of tumour budding in pre-treatment biopsies can help stratify patients who will have a worse oncological outcome, however, assessment of tumour budding should only be performed on samples with adequate tissue.

Keywords: Rectal cancer; tumor; budding; outcome

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