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Colorectal carcinomas with a mucinous component and its association with TNM stage

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Introduction and objectives: The World Health Organization defines colorectal carcinoma (CRC) as mucinous if >50% of the tumour area comprises extracellular mucin pools. Tumours with >10% but <50 % mucin are termed adenocarcinoma with a mucinous component. This 50% cut-off point has been questioned by previous studies. This study analyses the association of mucin percentage with local tumour extent, nodal involvement and distant metastasis.

Methodology: A population of neoadjuvant naïve CRCs selected consecutively from four tertiary care centres in Sri Lanka and referred to involved researchers from January 2022 to December 2023 were evaluated for the percentage of mucin. This was determined by eyeball estimation of the entire tumour by the reporting consultant pathologist, and histology of each case was re-examined for accuracy by the first author and at least one of the two pathologists. Stage (tumour extent, nodal involvement, and distant metastasis) was determined according to AJCC 8th edition. Fisher's exact test, Kendall's tau b and Mann-Whitney-U test were used for analysis.

Results: T Of 96 cases, 21 showed the presence of mucin. Mucin percentage showed a significant positive association with T stage ($\tau_b=0.264$, $p=0.004$) but not with nodal involvement ($U=946$, $p=0.220$) or distant metastasis ($U=438$, $p=0.545$). Eleven cases were of mucinous type (>50% mucin), and these did not show a significant association with T ($U=321$, $p=0.060$), N ($\phi=0.192$ $p=0.096$) or M ($\phi=0.049$, $p=0.646$) stage. In carcinomas containing less than 50% mucin, the mucin percentage had a significant positive association with T stage ($\tau_b=0.208$, $p=0.038$). In carcinomas with more than 50% mucin this was not seen ($\tau_b=0.501$, $p=0.076$), as all were stage T 3/4.

Discussion and conclusions: T stage rose significantly with the percentage of mucin in CRC, but not in those with >50% mucin (mucinous type). Therefore, reporting the presence of the percentage of mucin in CRC (as a continuum) in those with < 50% mucin may be an important prognostic parameter.

Keywords: colon cancer, adenocarcinoma with a mucinous component, tumour staging

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