ABSTRACT:

TITLE: Comparison of response to neoadjuvant therapy using MRI tumor regression grading in patients with locally advanced rectal cancer below 25 years of age and above 25 years of age

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AIMS AND OBJECTIVES: The aim of this study was to compare the MRI findings, and response to neoadjuvant therapy using MRI tumor regression grading in patients with rectal cancer below the age of 25 years with patients more than 25 years of age.

MATERIALS AND METHODS: Partly retrospective and partly prospective study approved by the institutional review board. 27 patients below 25 years of age and 115 older patients above 25 years of age with locally advanced rectal cancer were included in the study. Both the subsets of patients had MRI for initial staging and for restaging following neoadjuvant therapy. The various MRI features of the tumor, TNM staging, MRI tumor regression grade and histological features of the tumor were assessed.
RESULTS: On bivariate analysis, the incidence of tumors with MRI T2 high signal intensity in patients ≤ 25 years of age was higher, 48.1% compared to 19.3% in patients > 25 years of age. The incidence of poor response to neoadjuvant therapy (by MRI tumor regression grade) was significantly more common in younger patients (66.7%) compared to older patients (40.9%). Factors like age less than 25 years, T2 high signal intensity, presence of EMVI, mucinous tumors and poorly differentiated tumors were significantly associated with poor response to neoadjuvant therapy. T2 high signal in MRI and presence of EMVI were found to be two independent predictors for poor response.