

## AB203. Microsatellite instability and response to neoadjuvant chemoradiotherapy in rectal cancer: a systematic review and meta-analysis

Emer O'Connell<sup>1</sup>, Ian Reynolds<sup>1</sup>,  
Deborah McNamara<sup>1</sup>, Jochen Prehn<sup>2</sup>, John Burke<sup>1</sup>

<sup>1</sup>Department of Colorectal Surgery, Beaumont Hospital, Beaumont, Dublin, Ireland; <sup>2</sup>Department of Physiology and Medical Physics, Royal College of Surgeons in Ireland, Dublin, Ireland

**Background:** Response to neoadjuvant chemoradiotherapy (CRT) in locally advanced rectal cancer is variable. Identification of biomarkers to predict response is desirable in order to provide prognostic information and targeted therapy. Several studies have investigated microsatellite instability (MSI) as a predictor of response to CRT with contradictory results. This study aims to clarify the effect of MSI status on response to CRT in locally advanced rectal cancer through systematic review and meta-analysis.

**Methods:** A systematic search of PubMed, Embase and Cochrane databases was performed for all studies relating

to MSI and response to CRT in rectal cancer using the search algorithm (Microsatellite Instability) AND (Chemoradiotherapy) AND (Rectal Cancer). From each included study the number of patients with MSI tumors and microsatellite stable (MSS) tumors and the numbers achieving pathological complete response (pCR) were recorded. Pooled outcome measures were determined using a random effects model and the odds ratio estimated with variance and 95% confidence interval.

**Results:** Nine published studies were identified reporting data on MSI and its effect on outcome after CRT for locally advanced rectal cancer. Five studies describing 5,877 patients included data on MSI and the number of patients achieving pCR. There was no significant association between MSI and pCR (MSI *vs.* MSS: 10.1% *vs.* 6.6%, OR 1.38, 95% CI: 0.7–2.72, P=0.35).

**Conclusions:** Our meta-analysis concludes that there appears to be no significant difference in pCR rate following CRT in patients with MSI versus MSS rectal tumors.

**Keywords:** Microsatellite instability, neoadjuvant chemoradiotherapy, pathological complete response, rectal cancer

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