# AB043. 56. The significance of mucin pools post neoadjuvant chemoradiotherapy for locally advanced rectal cancer

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**Background:** Neoadjuvant radiotherapy is utilized for locally advanced rectal cancer to optimize local control. A subset of patients form mucin pools following radiotherapy but the effect of mucin pools on pathological and oncological outcomes following curative proctectomy for rectal cancer is unknown.

**Methods:** A review of a prospectively maintained rectal cancer database was performed. Patients who underwent curative proctectomy for rectal cancer following long course chemoradiotherapy between January 2007 and December 2016 were eligible for inclusion. Survival was compared using a Log-rank test.

**Results:** A total of 494 patients underwent proctectomy for rectal cancer during the study period and 297 patients were eligible for inclusion; of these 36 (12.5%) had mucin pools on final histopathology. There were no difference between patients with mucin pools and those without in age at diagnosis (P=0.096), sex (P=0.845), procedure type (P=0.568), tumour differentiation (P=0.776), lymphovascular invasion (P=0.225), extramural venous invasion (P=0.222), perineural invasion (P=0.151), margin positivity (P=0.602), or lymph node positivity (P=0.255). Tumours with mucin pools were less likely to be ypT3/T4 (23.7% *vs.* 51.2%, P=0.003), were more likely to have a good response (81.6% *vs.* 53.5%, P<0.001) and more likely to have a complete pathological response (39.5% *vs.* 19.2%, P=0.006). Tumours with mucin pools were more likely to be MMR deficient (33.3% *vs.* 0.0%, P=0.050). The presence of mucin pools did not influence local (P=0.339) or distant recurrence (P=0.086).

**Conclusions:** The presence of mucin pools following neoadjuvant chemoradiotherapy for rectal cancer represents a surrogate marker of response to treatment and down-staging, but does not influence survival.

**Keywords:** Rectal cancer; mucin pools; neoadjuvant chemoradiotherapy; tumour downstaging; complete pathological response

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