

Meta-analysis comparing differing methods of endoscopic therapy for colorectal lesions

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Abstract

AIM: To compare the outcomes of endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD) of colorectal lesions.

METHODS: An electronic systematic literature search of four computerized databases was performed in July 2014 identifying studies reporting the outcomes of colorectal ESD and EMR. The primary outcome measures were *en-bloc* resection rate, endoscopic clearance rate and lesion recurrence rate of the patients followed up. The secondary outcome was the complication rate (including bleeding, perforation and surgery post EMR or ESD rate). Statistical pooling and random effects modelling of the studies calculating risk difference, heterogeneity and assessment of bias and quality were performed.

RESULTS: Six observational studies reporting the outcomes of 1324 procedures were included. The *en-bloc* resection rate was 50% higher in the ESD group than in the EMR group (95%CI: 0.17-0.83, $P < 0.0001$, $I^2 = 99.7\%$). Endoscopic clearance rates were also significantly higher in the ESD group (95%CI: -0.06-0.02, $P < 0.0001$, $I^2 = 92.5\%$). The perforation rate was 7% higher in the ESD group than the EMR group (95%CI: 0.05-0.09, $P > 0.05$, $I^2 = 41.1\%$) and the rate of recurrence was 50% higher in the EMR group than in the ESD group (95%CI: 0.20-0.79, $P < 0.001$, $I^2 = 99.5\%$). Heterogeneity remained consistent when subgroup analysis of high quality studies was performed (with the exception of piecemeal resection rate), and overall effect sizes remained unchanged for all outcomes.

CONCLUSION: ESD demonstrates higher *en-bloc* resection rates and lower recurrence rates compared to colorectal EMR. Differences in outcomes may benefit from increased assessment through well-designed comparative studies.

Key words: Colorectal; Colonic polyp; Endoscopic

