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#### 4.23. Effective treatment of early Barrett's neoplasia with stepwise circumferential and focal ablation using the HALO system

JJ Gondrie, RE Pouw, CMT Sondermeijer, FP Peters, WL Curvers, WE Rosmolen, F Ten Kate, P Fockens, JJ Bergman

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**Study Aims:** The aim of the current study was to evaluate the efficacy and safety of stepwise circumferential and focal ablation using the HALO system for Barrett's esophagus containing flat, high-grade dysplasia (HGD) or residual dysplasia after endoscopic resection for HGD or intramucosal cancer (IMC).

**Methods:** Visible abnormalities were removed with endoscopic resection prior to ablation. Persistence of dysplasia and absence of IMC were confirmed with biopsy after endoscopic resection. A balloon-based electrode was used for primary circumferential ablation and an endoscope-mounted electrode was used for secondary focal ablation.

**Results:** Twelve patients (nine men; median age 70 years) were treated (median Barrett's length 7 cm). Visible abnormalities were removed by endoscopic resection in seven patients. The worst pathological grade of residual Barrett's esophagus after resection and prior to ablation was low-grade dysplasia (LGD) (n = 1) and HGD (n = 11). Patients underwent a median of one circumferential and two focal ablation sessions. Complete remission of dysplasia was achieved in 12/12 patients (100 %). Complete endoscopic and histological removal of Barrett's esophagus was achieved in 12/12 patients (100 %). There were no ablation-related stenoses, and no subsquamous Barrett's esophagus was observed in 363 biopsies obtained from post-ablation neo-squamous mucosa. Protocolized cleaning of the ablation zone and electrode in between ablations resulted in superior regression of Barrett's esophagus compared with previous studies. During a median follow-up of 14 months no recurrence of dysplasia or Barrett's esophagus was observed.

**Conclusions:** Stepwise circumferential and focal ablation for Barrett's esophagus with flat HGD or for Barrett's with residual dysplasia after endoscopic resection for HGD/IMC is a safe and effective treatment modality. Its success rate and safety profile compare favorably with alternatives such as esophagectomy, widespread endoscopic resection or photodynamic therapy.