Predictive factors for initial treatment response after circumferential radiofrequency ablation for Barrett’s esophagus with early neoplasia: a prospective multicenter study.

Radiofrequency ablation (RFA) is safe and effective for the eradication of neoplastic Barrett’s esophagus; however, occasionally there is minimal regression after initial circumferential balloon-based RFA (c-RFA). This study aimed to identify predictive factors for a poor response 3 months after c-RFA, and to relate the percentage regression at 3 months to the final treatment outcome. We included consecutive patients from 14 centers who underwent c-RFA for high grade dysplasia at worst. Patient and treatment characteristics were registered prospectively. "Poor initial response" was defined as < 50 % regression of the Barrett’s esophagus 3 months after c-RFA, graded by two expert endoscopists using endoscopic images. Predictors of initial response were identified through logistic regression analysis. There were 278 patients included (median Barrett’s segment C4M6). In poor initial responders (n = 36; 13 %), complete response for neoplasia (CR-neoplasia) was ultimately achieved in 86 % (vs. 98 % in good responders; P< 0.01) and complete response for intestinal metaplasia (CR-IM) in 66 % (vs. 95 %;
Poor responders required 13 months treatment (vs. 7 months; P< 0.01) for a median of four RFA sessions (vs. three; P< 0.01). We identified four independent baseline predictors of poor response: active reflux esophagitis (odds ratio [OR] 37.4; 95 % confidence interval [CI] 3.2 - 433.2); endoscopic resection scar regeneration with Barrett's epithelium (OR 4.7; 95 %CI 1.1 - 20.0); esophageal narrowing pre-RFA (OR 3.9; 95 %CI 1.0 - 15.1); and years of neoplasia pre-RFA (OR 1.2; 95 %CI 1.0 - 1.4). Patients with a poor initial response to c-RFA have a lower ultimate success rate for CR-neoplasia/CR-IM, require more treatment sessions, and a longer treatment period. A poor initial response to c-RFA occurs more frequently in patients who regenerate their endoscopic resection scar with Barrett's epithelium, and those with ongoing reflux esophagitis, neoplasia in Barrett's esophagus for a longer time, or a narrow esophagus.