5.10. Subsquamous intestinal metaplasia is a common finding in ablation-naïve patients with dysplastic Barrett's esophagus, and significantly decreases in prevalence after radiofrequency ablation

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Background: Subsquamous intestinal metaplasia (SSIM) has been reported as an adverse outcome of endoscopic ablative therapy for dysplastic Barrett's esophagus (BE). However, the prevalence of SSIM in ablation-naïve patients with dysplastic BE is unknown, as is the response of SSIM to ablative therapy.

Aim: To assess the prevalence of SSIM in ablation-naïve patients with BE containing HGD or LGD, and then to assess the prevalence of SSIM after ablative therapy. Methods: The AIM Dysplasia Trial is a U.S. multi-center, randomized, sham-controlled trial evaluating the safety and effectiveness of radiofrequency ablation (RFA) for treatment of dysplastic BE. All baseline endoscopic biopsies were reviewed by Cleveland Clinic pathology to confirm the diagnosis of BE and the grade of dysplasia. Each biopsy fragment for each esophageal level for each patient was prospectively assessed in a blinded manner for worst pathological grade of dysplasia and for findings of SSIM (defined as IM covered by squamous epithelium with no communication to the surface).

Results: For the 127 subjects randomized, baseline pathology included a total of 2,151 fragments from 438 blocks. SSIM was present in 32 patients (25.2%). The percentage of fragments displaying SSIM was 3.1% (67 of 2,151). An analysis according to baseline worst pathological grade (HGD vs. LGD) is shown in the table. There are 35 RFA pts and 16 sham pts with evaluable histology at 12 mos. In 1,223 fragments from the RFA group, there was a marked decrement in SSIM prevalence with only one fragment positive for SSIM (0.1%, $p < 0.001$ vs. pre-RFA). In 490 fragments from the sham group, there was no change in prevalence of SSIM (20 SSIM fragments (4.1%) in 8 subjects, p = NS vs. baseline). Amongst the 1 RFA and 8 sham pts with SSIM at 12 mos, 1 fragment from 1 sham pt harbored a worse dysplasia grade than any surface biopsy for that patient (indefinite vs. non-dysplastic).

Conclusions: Although often considered a result of incomplete ablation, SSIM is a common finding in ablation-naïve dysplastic BE pts, occurring in 25% of our pts at baseline. A finding of SSIM was more common in LGD than HGD. The RFA group had a significant decrease in SSIM prevalence at 12 mos, while the sham group did not. The pre-treatment status of a pt undergoing ablative therapy should be thoroughly assessed, as post-therapy SSIM may represent the patient's natural state, rather than ineffective ablative therapy.