OBJECTIVES: Assess if heparin-bonding improves patency of subintimal recanalization of TASC D femoropopliteal disease using Viabahn stents.

METHODS: We compared patients receiving either standard (Group I, n=20) or heparin-bonded (Group II, n=19) ePTFE-covered stents for Viabahn-assisted subintimal recanalization (VASIR) of severe (TASC D) femoropopliteal artery occlusive disease. Demographics, comorbidities, presenting symptoms, treated length, improvement in ankle-brachial index, patency assessed by ABI and duplex imaging, and length of follow-up were examined.

RESULTS: The age difference between groups was not significant (Group I 70.7±12.1 yrs, Group II 64.8±13.9 yrs), nor were differences in gender (Group I M/F=9/9, Group II M/F=8/8), comorbidities, or presenting symptoms. Although the treated length of artery was slightly greater in Group II (29.9±10.8 cm vs 32.4±4.5 cm, p=.016), improvement in ABI was similar (Group I 0.41±.16, Group II 0.51±.17) as was mean length of follow-up (Group I 18.3±6.3 months, Group II 18.2±6.0 months). Although life-table one-year primary patency was not significantly different between the two groups (Group I 68%, Group II 79%, log-rank p=.62), assisted primary (Group I 73%, Group II 89%, p=.11) and secondary patency (Group I 71%, Group II 89%, p=.21) tended to be greater in Group II vs. Group I, primarily because of fewer early thrombotic failures in Group II. However, some 5 mm grafts were used early on in Group I only and with these grafts excluded, the patency differences between Groups I and II were minimal, suggesting no benefit to heparin-bonding for grafts > 6 mm (p>.49 for primary, assisted primary, and secondary patency). Notably, patencies in both groups were similar to those reported for above-knee ePTFE bypass.

CONCLUSIONS: Heparin-bonding does not appear to improve patency in VASIR compared to standard Viabahn stent-grafts, making it difficult to justify the added expense; but maintaining patency in a failing graft to allow timely salvage intervention may be an important benefit, particularly in smaller diameter grafts. Patient selection may be a more important predictor of success than heparin-bonding. This preliminary study with small sample sizes requires larger samples and longer follow-up to further explore the role of heparin-bonded grafts in VASIR.