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### Significance of distal run-off score as a key influencer on clinical outcomes following endovascular interventions for superficial femoral artery disease

Miriam O'Sullivan<sup>1</sup>, Mohamed Elsharkawi<sup>1,2</sup>,  
Wael Tawfick<sup>1,2</sup>, Sherif Sultan<sup>1,2</sup>,  
Mohamed Elsherif<sup>1,2</sup>, Baker Ghoneim<sup>1,2</sup>

<sup>1</sup>Department of Vascular Surgery, Western Vascular Institute, University Hospital Galway, Newcastle Road Co. Galway, Ireland;

<sup>2</sup>Department of Vascular and Endovascular Surgery, Western Vascular Institute (WVI), University College Hospital, Galway (UCHG), Galway, Ireland

**Background:** Endovascular therapy (EVT) is being adopted as a suitable first choice in the treatment of femoropopliteal disease. There are multiple factors affecting outcomes of EVT including distal run-off status. The aim of this study was to investigate the effect of run-off score on the outcomes of superficial femoral artery (SFA) endovascular interventions.

**Methods:** Retrospective analysis was carried out on prospectively collected data on patients who underwent SFA endovascular intervention for critical limb ischemia. Patients with Rutherford categories 4 to 6 who had no previous vascular interventions were included. The modified SVS run-off score was used. Run-off was stratified into good (score <5), compromised (score 5–10), and poor (score >10). Amputation-free survival, patency rates and overall survival were compared at five years.

**Results:** From 2011–2018, 254 procedures were performed on 220 patients. There was no significant difference between good, compromised, or poor run-off groups regarding complication rates, with 3.5% overall Peri-operative mortality. Run-off score of <5 was associated with significantly marked clinical improvement ( $P<0.001$ ).

Patency rates were significantly worse in the compromised and poor run-off groups, with five-years cumulative primary patency rates of 80%, 50% and 22% in the good, compromised, and poor run-off groups, respectively ( $P<0.001$ ). Amputation-free survival worsened as the run-off got poorer with 98%, 91% and 78% in the good, compromised, and poor run-off groups respectively at five years ( $P<0.001$ ).

**Conclusions:** Poor run-off with score of >10 was associated with significantly reduced amputation-free survival and patency rates at five years in patients undergoing SFA endovascular intervention for critical limb ischemia.

**Keywords:** Critical limb ischaemia; endovascular; peripheral vascular disease; run off; superficial femoral artery (SFA)

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### Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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