First Australasian Multi-Centered Prospective Analysis of the SVS (Society for Vascular Surgery) WIFI (Wound, Ischemia and Foot infection) Classification

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Objectives: Data validating the WIFI classification system has largely been in the form of retrospective and single-centred studies across Europe and the United States. To date, the evidence has shown firstly a positive predictive 1-year amputation risk, and secondly a predicted benefit from re-vascularisation. In this study we sought to introduce the WIFI classification and train staff across three centres in Australia and New Zealand, to collect prospective data to validate the 1-year amputation risk prediction.

Method: During 2016 three centres across Australia and New Zealand (Flinders Medical Centre, Westmead Hospital, and Christchurch Hospital) had WIFI introduced as part of the initial assessment of wounds by trained medical professionals (Nurses, Podiatrists and Medical Officers). Between 2016 and 2018, prospective data was collected following initial staging of lower limbs with the primary end point being major amputations (below-knee or above-knee amputation). We also conducted staff questionnaires to assess the utility of WIFI amongst the health-care professions.

Results: A total of 184 initial lower limb assessments (subsequent limb assessments excluded) were conducted with 345 median days of follow up (mean = 449 days). 13 major amputations were performed in total on these patients. The clinical staging for 1-year amputation risk was the following:

- Stage 1: Very low, 1% (total limb loss 1/76 patients)
- Stage 2: Low, 4% (total limb loss 1/25 patients)
- Stage 3: Moderate, 14% (total limb loss 5/37 patients)
- Stage 4: High, 21% (total limb loss 6/28 patients)

Conclusions: WIFI classification requires training for health care professionals to produce reliable and reproducible staging results. The ischemia portion relies heavily on toe pressure assessment of perfusion. The predicted 1-year major amputation risk has shown to correlate with the severity of clinical stage. The benefit from staging derives from its categorical risk assessment. Its utility is still restricted to research purposes and its true clinical value has yet to be quantified.

Author disclosures: H. Narroway: None; N. Katib: None; S. Rajput: None; O. Aziz: None; M. Vicaretti: None; F. Guerriero: None; M. Khashram: None.