

wounds were identified).² Despite seemingly good predictive ability, heterogeneity in the timing of PAR and outcome measurement, lack of external validation, and high risk of bias limit PAR's value. Most studies retrospectively analyzed data from randomized controlled trials.

Of the four publications referenced in the Global Vascular CLTI guideline concerning PAR (of which three were included in our systematic review), two included DFUs,^{3,4} one solely included postoperative wounds in diabetic patients,⁵ and one included DFUs or VLU.⁶ The optimal PAR cutoffs reported varied considerably: 37.7%,⁵ 50%,⁴ 53%,³ and 60%.⁶ Unsurprisingly, healing rates vary due to diverse pathologies and unforeseen events (eg, infection). Crucially, the randomized controlled trials from which these studies derive data exclude patients with ischemia or active infection.⁷⁻¹⁰

Our review concludes that, although PAR may be of value in research, its use in routine clinical practice to predict DFU or VLU healing is not supported by robust evidence. We agree that failure of an ischemic wound to progress towards healing should prompt consideration of revascularization. Although this practice is intuitive, the referenced papers in the CLTI guidelines do not actually inform the recommendation to use PAR as a surrogate marker of healing in patients with CLTI. More research is required to establish exactly what the clinical utility of PAR is for patients with ischemic wounds.

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Reply



The authors made very salient points about the limitations of using the percent area reduction (PAR) of lower extremity wounds as a surrogate predictor for complete healing in patients with chronic limb-threatening ischemia (CLTI). As noted in their recent systematic review,¹ the data underlying the proposed 50% PAR at 4 weeks as a threshold for predicting for full healing were from a small number of studies largely of patients with diabetic foot ulcer and not specifically in the setting of advanced ischemia (eg, CLTI). The data from these studies had notable heterogeneity. The recommendations from the Global Vascular Guideline that have incorporated this measure include those focused on when to consider revascularization for patients with either low- or intermediate-limb threat (recommendations 6.10 and 6.14) and for those with a high surgical risk (recommendations 6.35 and 6.36).^{2,3} In each of these cases, the strength of the recommendation was graded as weak (grade 2) and the strength of evidence as low (C). In practical terms, the patients in these subgroups should initially be treated with wound care, offloading, and infection control, with revascularization reserved for clear evidence of failure to make progress or frank deterioration. At present, no robust, validated biomarker or clinical

measure is available to accurately predict a trajectory for complete healing for these patients. Such a biomarker would be of significant value in both clinical decision-making and the efficient design and execution of clinical trials. Given these important caveats, we still believe it is reasonable to suggest 50% PAR at 4 weeks as an estimator of the trajectory until a better validated measure has been identified, specifically for the CLTI population.

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