

Wound Inflammatory Index: A “Proof of Concept” Study to Assess Wound Healing Trajectory

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Abstract

Diabetes around the globe results in one major limb amputation every 30 seconds, over 2500 limbs lost per day. The underlying pathophysiology sometimes leads to a chronic inflammatory stage, which may prevent appropriate healing, and therefore, the need for a clear strategy for assessing and classifying wounds and wound healing cannot be overstated. Temperature is a surrogate marker for inflammation. Quantitative thermography using a numerical index provides a useful way to assess wound healing. Advances in technology have afforded the availability of low-cost, high-resolution thermal imaging systems, which can be used to quantify sensitive changes on the skin surface and may be particularly useful to develop monitoring strategies for wounds. This article provides a standardized technique for calculating a thermal index (TI) supported with a case report from assessment of a diabetic foot ulcer. In this single case study, the TI/wound inflammatory index indicates a shift from negative to positive ($p < .05$) before it reaches zero.

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Abbreviations: (TI) thermal index, (WII) wound inflammatory index

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