

Cost Effectiveness of Paired Non-Invasive Vascular Testing Technologies in Wound Healing

Roger Schechter, MD and Bradley Bailey, MD

Background: In today's environment clinicians are faced with increasing costs of care in of chronic wounds, since patients frequently present with wounds of lengthy duration and complex origin. The care and management of these patients is often multifaceted and resource intensive. The newer multidisciplinary paradigm of wound management requires a mindset of cost-consciousness, clinic efficiencies and documented patient outcomes.

Methods: Our single-center trial involved a prospective, nonrandomized, observation of 100 patients presenting with lower extremity wounds of varying etiologies followed up to 16-weeks or healing (whichever occurred first). We coupled 4 commercially available technologies (Group-1: Skin Perfusion Pressure (SPP)/Pulse Volume Recording (PVR); Group-2: Transcutaneous Oxygen Monitoring (TCOM)/Ankle-Brachial Index (ABI)) and assessed for time efficiencies and predictive capabilities. All patients underwent testing with both paired modalities. Outcomes were compared to final healing status and cost of testing is estimated. We report our initial experience for 84 patients.

Results: These populations of similar gender distribution had a high rate of diabetes (50%: 42/84). Study outcomes positive for:

- Mean test time: 6.8 minutes (range 3-15) Group-1; 35 minutes (range: 25-47) Group-2.
- Wound healing prediction: Group-1 88.9% (32/36) compared to 63.9% (23/36) for Group-2.

Conclusion: These early findings demonstrate substantially reduced test times, and decreased staff and equipment costs with SPP/PVR. Also, more accurate results were obtained with SPP/PVR compared to TCOM/ABI which may help guide clinicians to earlier treatment pathways and improve patient outcomes and therefore reduce overall cost of care.