INITIAL HEALING RATES AS PREDICTIVE FACTORS OF VENOUS LEG ULCER HEALING: THE USE OF A LASER BASED 3-D ULCER

Nada Kecelj-Leskovec, Maja Pohar Perme, Matija Ježeršek, Miloš D. Pavlovč, Janez Možina, Tomaž Lunder

University Medical Centre, Ljubljana, Slovenia

Aim: To measure venous leg ulcers in three dimensions in first visit and 4 weeks later. To estimate the predictive power of vertical (VIHR) and horizontal initial healing rates (HIHR) in first month of therapy. To assess the magnitude of predictive potency of both initial healing rates and ulcer duration on wound healing within 24 weeks of care.

Methods: We used the new 3D-laser-based measuring method with a precision of 7.5% which also takes into account distortions created by the limb convexity. The system is accurate, inexpensive, user-friendly, and appropriate for everyday practice. We calculated VIHR and HIHR by using the Gilman’s equation (delta A/p (0-4)) and by modification of Gilman’s equation (delta V/A (0-4)). A prospective, single-centre cohort study was done on 81 consecutive patients with chronic venous leg ulcer, treated with long stretch compression therapy, flavonoids and dressings.

Results: The horizontal (HIHR) and vertical initial healing rates (VIHR) are important predictors of healing in 24 weeks. They are not influenced by age, ulcer duration, initial ulcer area and insufficient sapheno-femoral and perforating veins. Together with ulcer duration, they are independent predictors of the 24 weeks healing (the area under ROC curve equals to 0.9).

Discussion: The vertical initial healing rate gives us important additional information and significantly improves the prediction of 24 week healing. Together with HIHR and the ulcer duration, it enables us to predict the 24-week healing with a high specificity and sensibility.