Debridement of chronic leg ulcers by means of a new fluidjet based device

Introduction
A group of 168 patients of a total of 709 hospitalised for hard-to-heal leg vascular ulcers was treated with the VERSAJET HydroSurgery system at the Clinica Barbantini between November 2003 and December 2005. The debridement procedure was performed in the ward under local anaesthetic when possible. Patients with large and painful ulcers underwent debridement in theatre under general anaesthesia.

In 49 patients with clinical signs of infection, the wound bacterial burden was measured both before and after the VERSAJET procedure. Use of VERSAJET on the infected ulcers was found to dramatically reduce the bacterial load, from $10^6$ to $10^3$ CFU/cm².

The pain caused to the patient by VERSAJET was found to be acceptable, and generally well tolerated. Anaesthesia was avoided completely in many patients by adjusting the power level according to pain tolerance, and local anaesthetic was used in cases where further minimization of pain was required.

Of the 143 patients treated using VERSAJET without general anaesthesia, 108 (87.8%) determined the pain level with VERSAJET to be comparable to that induced by cleansing with gauze and saline solution. Also, as VERSAJET debridement is rapid, the cumulative pain level is reduced when compared with the longer debridement time required when using moist dressings.

The treated ulcer bed remained “clean”, even in cases where minor bleeding occurred, because the suction effect at the collecting point removed excised tissue, debris and contaminants, providing a clean wound bed with a smooth surface in a single debridement step. VERSAJET debridement was found to be more effective and shorter in duration than that used with moist dressings. In 139 cases an adequately debrided wound bed was achieved with just 1 operative procedure; with 22 and 7 patients requiring 2 and 3 procedures respectively. As the time taken for complete ulcer debridement was considerably shorter than that required with the traditional treatment, the patients hospital stay was also shortened considerably.

VERSJET is a valuable device for debridement of hard-to-heal leg vascular ulcers stuck at the inflammatory stage. It has a number of advantages over traditional treatments, providing a more effective and shorter debridement, and being less aggressive and more selective, sparing more healthy tissue and preventing the diffusion of microbial contamination into the wound. VERSAJET favorably impacts on all components of the T.I.M.E. acronym; removing necrotic tissue and fibrin slough, reducing bacterial load, effecting a change in exudate composition and having definite effects on ulcer edge advancement.