

## The health economics and clinical impacts of the Versajet debridement system

A report from a satellite symposium held on the occasion of the 8<sup>th</sup> Annual Conference and Exhibition of *The Diabetic Foot Journal*. The meeting took place on 4 June 2007 at the Thistle Hotel, Glasgow, and was supported by Smith&Nephew.

### Introduction

The Versajet debridement system has been shown to be effective in the debridement of diabetic foot ulcers. Its use has been shown to increase healing, reduce the number of procedures required and increase limb salvage. The purpose of the symposium was to highlight the clinical evidence and health economic work that has been carried out on Versajet in the UK. The Chair for the meeting was Matthew Young a Consultant Physician in Edinburgh; other speakers included Joanne McCardle (Diabetes Specialist Podiatrist, Edinburgh), Fiona Murray (Lead Podiatrist, Northumbria Diabetes Service) and Graham Bowen (Podiatry Clinical Lead for Diabetes and Podiatry Advisor, Southampton). This is a report from the symposium.

The global challenge of diabetic foot ulceration has been highlighted in recent years by such national and international societies as Diabetes UK and the International Diabetes Federation. As well as the application of appropriate and cost-effective dressings, debridement of the neuropathic or neuroischaemic ulcer is pivotal for healing to take place. There are many methods the skilled healthcare professional can use to debride such ulcers, such as sharp and biological.

A recent development in debridement methodology is the Versajet system developed by Smith&Nephew. The technology utilises the Venturi effect, which is the drop in pressure that occurs around a rapidly flowing fluid. The resultant vacuum sucks debris and contaminants into the evacuation tube of the Versajet system. The system allows the user to control the fluid pressure, therefore, increasing or decreasing

the amount of suction depending on the wound specifics.

### The Versajet hydrosurgery system: An overview

In the first talk Joanne McCardle offered an overview of the Versajet system: some wounds can be difficult to debride with a scalpel and some are unsuitable for larval debridement (such as those with multiple sinuses) – in these instances the Versajet system offers an effective and rapid alternative to debriding.

The Versajet system should not be used for superficial wounds, in people with established peripheral arterial disease, in the presence of pain or when other methods such as scalpel debridement will suffice. Joanne stated that this technique should not be used by anyone who is not already skilled at sharp debridement and has a full knowledge of foot anatomy.

She concluded that in her experience Versajet effectively excises unwanted tissue and leaves

a clean wound bed, which can lead to quicker healing times.

### Versajet's impact on the economics of diabetic foot ulceration

It is widely agreed that diabetic foot disease is very costly to the NHS, especially with regard to the number of days people with such ulcers spend in hospital. A contributing factor to this significant use of health resources is the number of repeat surgical procedures carried out on patients with foot disease.

'Sharp debridement of diabetic foot ulcers is carried out daily by podiatrists from the specialist diabetes podiatry service, so why *are* we using Versajet in our area?' Fiona Murray put forward. Fiona and her colleagues have found that the use of Versajet has reduced the number of surgical procedures required by individuals as well as shortening inpatient stays by a significant length of time. Case study 1 demonstrates the former and case study 2 the latter (see page 166).

To support Fiona's claims, Graham Bowen presented health economic impact data from Southampton. He concluded that the use of Versajet: can avoid unnecessary hospital admissions; can change admissions from non-elective to elective; can reduce readmission rates; can shorten healing times, therefore reduce antibiotic therapy and costs; can reduce consultant referrals; can reduce total length of stay. ■

# MeetingREPORT

## Case study 1

Case 1 is a 47-year-old male who was diagnosed with type 2 diabetes in December 2001. He has been treated using insulin since 2002. He has hypertension, proteinuria, hypercholesterolaemia, proliferative retinopathy, and he is clinically obese. He has had recurrent foot problems since 2002. Abnormal coagulation factors were noted in September 2005 and he was treated with warfarin the following month. His problems prior to Versajet use included an infected left 2nd toe in January 2005 which was subsequently amputated in April 2005; his left 3rd toe was vasculitic and ischaemic in July 2005 and was subsequently amputated in August 2005. Two weeks after amputating his left 3rd toe, his left 4th toe also became vasculitic and ischaemic, this became increasingly ischaemic and went into circulatory shutdown despite the use of tinzaparin and warfarin (November 2005). Case 1's progress from November 2005 can be seen below.



Time 0 (11th November 2005).



3rd January 2006. After standard orthopaedic amputation.



23rd January 2006. Two further surgical debridements have been performed.



27th January 2006. One day post Versajet use

## Case study 2

Case 2 is a 72-year-old male with type 2 diabetes. He has diabetic retinopathy, peripheral neuropathy, hypertension, nephropathy – renal failure – and had an infected neuropathic heel ulcer since September 2005. He was admitted surgical debridement on the 19th of October 2005: Versajet was used. Post-Versajet debridement his wound was dressed using Acticoat-7 (Smith&Nephew, Hull). He was discharged on the 21st of October 2005. Subsequently he was followed up by the specialist diabetes podiatry team. Below can be seen his progress from prior to admission to 7-weeks post Versajet debridement.



14th October 2005. Infected necrotic heel ulcer, probes to bone, no osteomyelitis on X-ray. Deteriorating rapidly.



26th October 2005. Seven days post Versajet debridement.



31st October 2005. Twelve days post Versajet debridement.



10th November 2005. Three weeks post Versajet debridement.



7th December 2005. Seven weeks post Versajet debridement.