Comparative Study of two different treatment methods using autologous thrombocyte-fibrin treatment of diabetic foot ulcers

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Non-healing diabetic foot ulcers continue to be a challenge for the healthcare system and there is an immense need for new treatment methods. Adding a concentrate of autologous thrombocytes containing growth factors (PRF) to the wound is believed to be a more efficient treatment than the standard treatment available today.

In this study we use two different treatments applying this method (PRF) seen from a nursing perspective.

11 patients were treated once a week for 3-6 weeks with the autologous PRF treatment. We used the Vivostat system, which is a closed sterile system, or GPS, which is a more open system available on the market. The treatments were carried out in the Diabetic Foot Clinic at the University Hospital in Lund, Sweden. The wounds were selected by a standardized protocol and were treated similarly. The PEDIS scale was used for classifying and photographing the wounds. Moreover, side effects, if any, from the treatments were documented together with the length of each treatment. The wounds were also measured prior to each treatment and this was documented in the case record.

6 patients and a total of 7 wounds were treated with the Vivostat system, and 5 patients with a total of 7 wounds received treatment with the GPS-system. There were no signs of deep infection in any of the groups. The wounds in both groups improved during treatment. Within one month after the last treatment, 2 wounds in the Vivostat group and 1 wound in the GPS group had closed. Each treatment lasted approximately one hour with small differences depending on the patient.

From a nursing perspective Vivostat is regarded as an easier method to use, as it is a closed and sterile system. The risk of blood contamination is also higher when using the GPS system than when using the Vivostat system. The GPS-system, however, requires less blood compared to Vivostat to obtain the same volume of thrombocyte concentrate.

From a patient perspective the treatment with thrombocyte-fibrin concentrate seems to be safe whether using Vivostat or GPS. In this pilot study there were no differences between the length and the wound healing ability of the different methods. From a medical perspective the Vivostat system is preferred as it is regarded as safer and easier to operate.

Both methods need to be studied further before they are introduced as routine treatment.