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### Assessment of Acellular porcine dermis as a new local treatment of diabetic foot ulcers

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**Background:** Local therapy of diabetic foot ulcers (DFU) is effective especially by application of bi-layered bioengineered skin substitutes (LBSS). However, this technique is often expensive and less available. Acellular porcine dermis could be a more effective and cheaper variation of this therapy. **Aim:** Aim of the study was to assess the effectiveness and safety of acellular porcine dermis application in the healing of the DFU and to compare it with the use of xenogenic porcine grafts. **Materials and methods:** We used acellular porcine dermis created by enzymatic degradation of epidermis and dermal cells (Xe-Derma, Bioskin, Czech Republic). This acellular dermis is dried and then chemically and radiologically sterilized. It is indicated as a temporary covering for second-degree burns or zones with complete loss of skin. Our clinic had had previous experience with DFU treatment by xenogenic porcine grafts. The first group (xenogenic porcine grafts) included 44 patients with DFU (31 men, 13 women, mean age  $58,6 \pm 15,9$  years, mean diabetes duration  $19,3 \pm 13,1$  years). The second group (acellular porcine dermis) included 7 patients (7 men, mean age  $55,7 \pm 8,6$  years, mean diabetes duration  $12 \pm 3,5$  years). Indications for both acellular porcine dermis and xenogenic porcine grafts were chronic non-healing foot ulcers without signs of severe inflammation, without osteomyelitis and critical ischaemia. The healing of the ulcers was defined by ulcer area change before and after treatment. The microbiological cultivation and eventual adverse events were compared between both groups as well. The median of input size of DFU was  $9,3 \text{ cm}^2$  in the first group and  $7,7 \text{ cm}^2$  in the second group. **Results:** After the therapy, both groups showed paired Wilcoxon test significant area defect reduction. In the first group, the median of area defect reduction was 52,8 % ( $p < 0,001$ ) and in the second group 70,1 % ( $p < 0,05$ ); no significant difference was found between these two methods. Mean time of application in the first group was  $32,1 \pm 19,2$  days, in the second group it was  $19,1 \pm 5,8$  days. The cultivation from the DFU before treatment was positive for staphylococcus aureus in 25 % in the first group and in 29 % in the second group, for MRSA in 6 % in the first group and in 29 % in the second group. Neither of these findings deteriorated the healing process. No adverse events were seen. **Conclusion:** Acellular porcine dermis is a safe and effective therapeutic method comparable to xenogenic porcine grafts in healing of diabetic foot ulcers. This study was supported by grant MZO 00023001.