EARLY ENZYMATIC DEBRIDEMENT OF DEEP DERMAL BURNS - RESULTS IN HANDS AND PRELIMINARY RESULTS IN FACE AND LOWER EXTREMITY (227)

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**Question:** Although the hands account for only 5% of the total body surface area, they are involved in more than 70% of treated burn injuries.

Early surgical debridement followed by autografting is still considered as the gold standard in the treatment of deep dermal burns. However we know about various difficulties regarding correct initial judgement of the burn extent and depth, timing of surgery or the limited accuracy of surgical debridement which may be responsible of persistent or residual hand deformity and poor aesthetic outcome.

We demonstrate our first results with enzymatic debridement in the treatment of deep dermal hand burns compared to the early surgical excision and grafting as our current standard of care (SOC). Early limited experiences with facial and lower extremities burns will also be presented.

**Methods:** We conducted a two-arm, prospective, randomized, single-center clinical trial, including 20 patients treated in our burn unit with deep dermal hand burns. In the experimental group NexoBrid™ was used for enzymatic debridement, applied for at least 4 hours within an occlusive dressing. The control group was treated surgically following SOC.

**Results:** The experimental group consisted of 20 patients with second and third degree hand burns. At an early stage (averaged 1.5 days) enzymatic debridement was performed either under regional (plexus) or general anesthesia. Most cases required no further revision due to complete eschar removal. In one case we enhanced enzymatic therapy with surgical debridement preventing sensory deficits of the first three digits. The wounds were either covered with partial thickness sheet grafts or temporary skin allografts. Following temporary wound coverage with alloplastic skin two patients presented spontaneous epithelialisation. One case required partial thickness skin grafts immediately after debridement.

All patients responded well after enzymatic debridement and presented primary healing of the burn wound. Long-term results regarding to functional and cosmetic outcome were at least equivalent to SOC, time to debridement and complete healing was found shorter.

Furthermore after enzymatic debridement two wounds were judged more superficial burned than initial assessed.

**Conclusions:** We found promising results for enzymatic debridement of burned hands with NexoBrid™ regarding healing potential without skin grafting leading to time efficient treatment and early rehabilitation. Long-term results in functional and aesthetic outcome and QoL were at least equivalent to our current SOC. Therefore we started to treat first patient groups with deep dermal burns in the face and lower extremities with special attention regarding aesthetic outcome.