TREATMENT OF PARTIAL AND FULL THICKNESS BURNS OF TWO HANDS BY ENZYMATIC DEBRIDEMENT WITH NEXOBRID® - A CASE-REPORT (P191)

*Kwa K.1, Breederveld R.1, Vloemans J.1, Tempelman F.1, Roodbergen D.1

1 Rode Kruis Ziekenhuis Beverwijk, Burn Center, Beverwijk, Netherlands

Introduction: Deep partial or full thickness burns require debridement. There are several techniques of debridement, including surgical and non-surgical procedures. Surgical debridement can lead to the removal of viable tissue, which is especially undesirable in the case of burns of functional areas like the hands or burns in children. To make an accurate diagnosis of burn depth, debridement is often delayed. Though this approach may prevent unnecessary surgical treatment and loss of viable tissue, it increases the risk of infection and sepsis. These are common problems in burn patients. NexoBrid® is a topical agent consisting of a concentrate of proteolytic enzymes enriched in bromelain, used for the acute debridement of burn eschar, thereby reducing the time to complete debridement. Here we present a case-report of a patient with burns to both hands treated with NexoBrid®. A 52-year old male with no medical history was presented at the Burn Centre of the Red Cross Hospital in Beverwijk with a mix of partial and full thickness flame burns to both sides of both hands.

Method: Our patient was intubated due to the extent of burns to his face and received adequate analgesics. On admission the burns of the hands were treated with Silver sulfadiazine cream. The following day, NexoBrid® treatment was started. All previously applied topical dressing and blisters were removed and soaked with an antibacterial solution for two hours. NexoBrid® was applied according to the manufacturers instruction. After four hours the NexoBrid® with the dissolved eschar was removed, using a tongue depressor, after which the wounds were again soaked with an antibacterial solution for two hours. Human allograft skin was applied to the dorsal side of both hands where the wounds appeared to be deep partial and full thickness. The palmar side of both hands, where the wound appeared to be superficial partial thickness, were covered with povidone iodine gauzes that were kept moist during the subsequent days.

Results: Operative treatment followed after four days. Both hands showed a viable wound bed with only minimal additional debridement needed. The burn of the left hand appeared to be slightly deeper than the right hand. A split skin graft meshed 1:1 was applied to the dorsal sides of the hands and fingers, after which negative pressure wound therapy was started for five days. Wound assessment five days post-operative showed a graft take of > 95% in both hands. The function of the right hand was normal. The function of the left hand was decreased as assessed by the occupational therapist.

Conclusion: The enzymatic treatment with NexoBrid® for deep burns of the hands showed adequate debridement with a subsequent good wound bed for skin grafting in a relatively short period post burn. This treatment resulted in reduction of wound healing time by ten days compared to our standard of care. Treatment with NexoBrid® provides a selective debridement of only eschar without affecting the viable tissue. Thus, making this enzymatic treatment ideal for the use in burns of the hands or in children where surgical excision may lead to loss of vital tissue. A multicenter, multinational, randomized, controlled, open label study in children with thermal burns to evaluate the efficacy and safety of NexoBrid® compared to standard of care treatment is underway. Furthermore, we propose an additional study in adults to evaluate the efficacy and functional outcome of the use of NexoBrid® to burns of the hands compared to standard of care treatment.