

Does chemical decontamination with Diphoterine® allow the application of Nexobrid® on acid burns?

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Background

In many countries, chemical industry uses Diphoterine® for chemical decontamination of the eyes. It has also been reported, that Diphoterine® is effective for chemical decontamination of the skin. In recent years enzymatic debridement has become popular in burn wound treatment. Nevertheless up to date enzymatic debridement is not always effective after chemical burns.

Methods

Matriderm sheets (Ø 5 mm x 1 mm) were submerged with 250 µl acidified water in 24 well cell culture plates with pH values as indicated. Nexobrid solutions (2mg/ml) in water, PBS or Diphoterine® (in Germany Previn®) were prepared and 250 µl were added to each acidified matriderm sample. After incubation 37°C the grade of matriderm digestions were evaluated and photographs were taken after 30, 60, 90, 120 min. Controls were treated analogously without Nexobrid. and digestion documented.

Conclusion

Diphoterine® was able to effectively change the pH level which lead to an increased enzymatic activity and an improved digestion of the collagen-based dermal substitute. Although clinical studies still have to follow, it seems that rinsing chemical burns with Diphoterine® could enable an effective enzymatic debridement with Nexobrid®.

T = 0 min

pH

5.5 2.3 2.1 2.0 1.4 1.0

H₂O

PBS

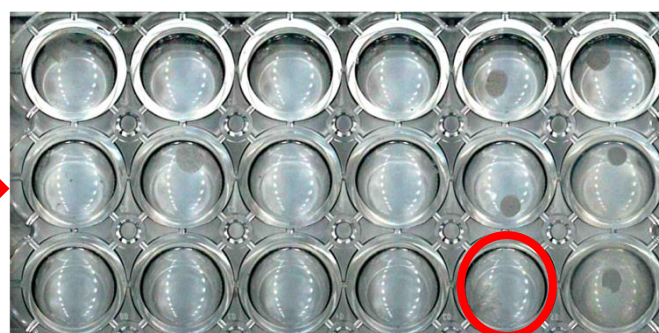
DIPHOTERINE



T = 60 min

pH

5.5 2.3 2.1 2.0 1.4 1.0



T = 120 min

pH

5.5 2.3 2.1 2.0 1.4 1.0

