

CHEMICAL INJURY: A FOUR-YEAR EXPERIENCE WITH AN ADVANCED APPROACH

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OBJECTIVE

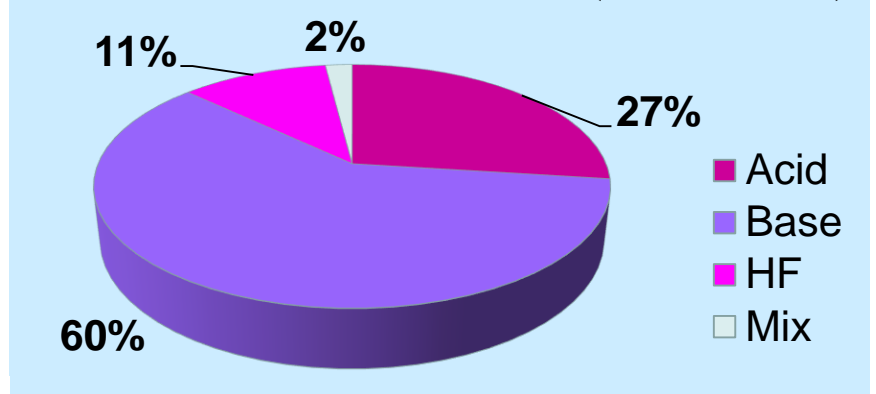
Chemical burns are a specific kind of injury requiring customized therapy. A radical change in skin pH results in tissue damage, sometimes with potentially life-threatening effects. In the burn patients hospitalized in the Gent Burn Centre, on average, 12% of the adult population and 1% of the pediatric patients suffered from chemical injury.

Water is still considered to be the golden standard in emergency rinsing of chemical injuries but there are additional options involving hypertonic solutions based on amphoteric and chelating molecules.

In March 2012 we started applying the above mentioned agents in the emergency management of chemical injuries. One agent is specifically intended for decontamination of Hydrofluoric acid splashes (Hexafluorine®).

The other agent is indicated for all further kinds of acid or alkaline splashing (Diphoterine®).

CHEMICAL BURN CAUSES (BWC GENT)



METHODS

We retrospectively compared the emergency treatment of chemical injuries admitted in our hospital between January 1st 2008 and December 31st 2015.

In the “control” group only water was used.

In the “advanced approach” group, the previously described hypertonic solutions were applied, according to indication and possibly preceded by rinsing with water.

Both research groups were statistically compared for composition (gender, age, chemical burn cause, triage), need for surgery and days of hospitalization.

Statistics were performed by means of SPSS 23.

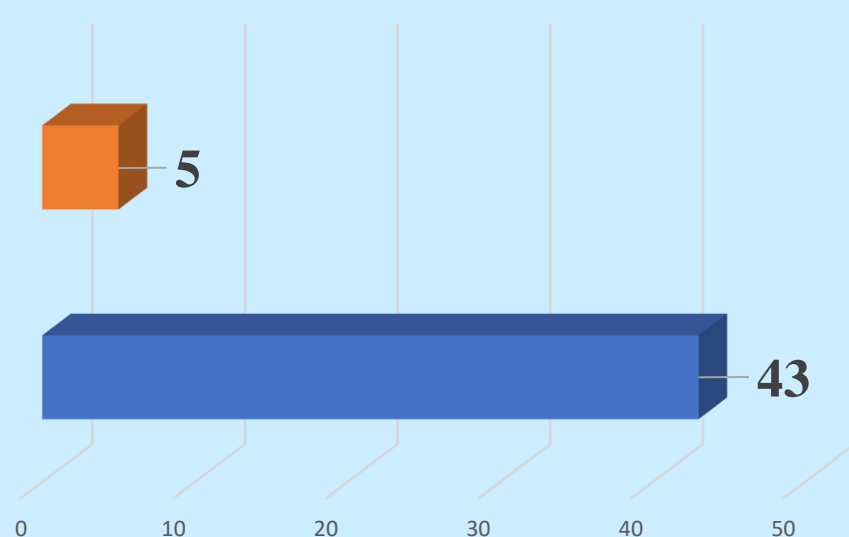
RESULTS

112 patients were included for statistical analysis, 66 in the “control” group and 46 in the “advanced approach” group.

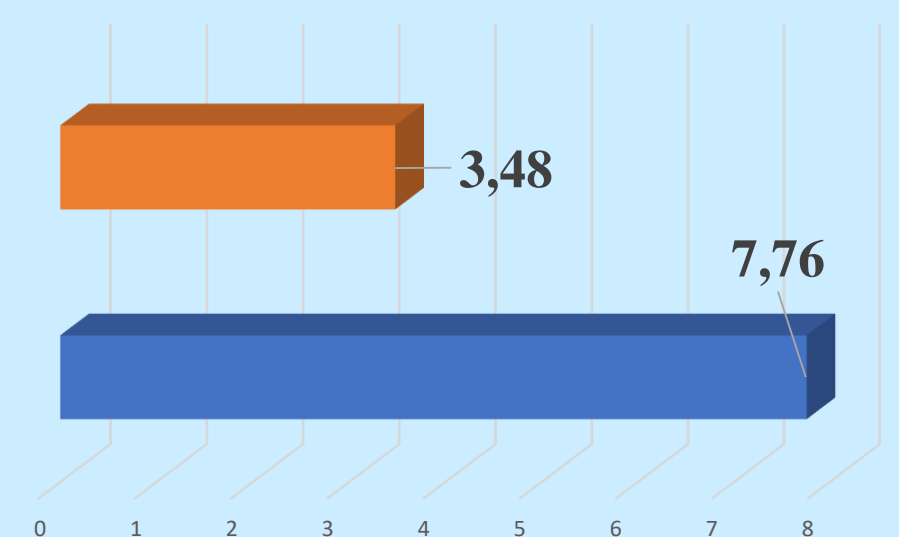
As far as composition is concerned, both research groups were comparable (gender $p=0,316$; age $p=0,134$; chemical burn cause $p=0,938$; triage $p=0,093$)

Statistics revealed significantly less surgery ($p<0,0001$) and a significantly shorter hospital stay ($p=0,031$) in the “advanced approach” group when compared to the “control” group.

TOTAL NUMBER OF SURGICAL INTERVENTIONS



AVERAGE HOSPITAL STAY (DAYS)



DISCUSSION / CONCLUSION

In our hospital, patients with chemical injury clearly benefited from the application of an advanced approach, involving hypertonic solutions based on amphoteric and chelating molecules, in the emergency management of this kind of trauma. Even in case of delayed rinsing we observe good results. In general, this adapted approach of chemical injuries could result in a reduction of costs (less need for surgery, shorter hospital stay, the patient is able to resume work earlier).

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The role of Diphoterine® in the management of cutaneous and ocular chemical injuries.

J Plast Reconstr Aesthet Surg. 2017 May;70(5):563-567.

Lynn DD, Zukin LM, Dellavalle R. The safety and efficacy of Diphoterine for ocular and cutaneous burns in humans.

Cutan Ocul Toxicol. 2017 Jun;36(2):185-192.

