

Alkalis – Biochemistry and Best Practice

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Given their utility as both commercial and domestic cleaning agents, alkalis account for the majority of chemical injuries presenting to Australian burns units (65% of all chemical injuries at our institution). Their prevalence unfortunately belies their underlying malevolence, with such injuries frequently leading to deep burns or disability if special areas are exposed or even death; mortality from alkali injuries can be as high as 30% in some series. This has led to the foundation of aggressive management protocols which, to the untrained observer, can appear to far exceed that which would be required for similar burns not caused by alkalis.

In order to better understand the rationale behind management of alkali injuries, any medical practitioner likely to be exposed to them needs a working understanding of their chemical properties, how these interact with human tissue and how this information informs best practice. First the pathophysiology behind alkali injuries is explored: hydrolysis and saponification of lipids, dehydration of cellular constituents and destruction of proteins via liquefactive necrosis. Having established the pathophysiology, attention then turns to how common approaches to management mitigate these affects namely by dilution, neutralisation, buffering and amphoteric chelation; a discussion of the protocols used at our institution, based on these principles, then follows.

Key Words

Alkalis, Pathophysiology, First Aid

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