

Hydroxyethyl starches in severe burns

To the Editor: The Medicines Control Council of South Africa recently lifted the suspension on the use of all medicines containing hydroxyethyl starch (HES), with the exclusion of, among other contraindications, patients with severe burns. A circular from the KwaZulu-Natal Department of Health furthermore restricts the use of HES-containing products to specialist anaesthetists, advising the use of Gelofusine for the 'general resuscitation of hypovolaemic patients in intensive care' or for the 'acute resuscitation of patients with severe, source-controlled haemorrhagic shock in theatre by a specialist anaesthetist'.^[1]

I submit that the exclusion of severe burns from the indications for the use of colloids, as well as the exclusion of consultant surgeons and emergency specialists from those who will be allowed to prescribe HES-containing products, indicates little insight into the evidence and the clinical situation at 'the coalface'. It may have escaped the attention of pharmacologists that the majority of patients with hypovolaemic shock are resuscitated not by anaesthetists but by front-line clinicians such as those mentioned above.

The initial decision to suspend the use of HES-containing resuscitation fluids was based on three studies, the VISEP study,^[2] the 6S study^[3] and the CHEST study.^[4] As was argued by Coetzee *et al.*,^[5] among others, these studies were 'seriously flawed and do not apply to the perioperative and acute resuscitation period'. The evidence against HES in burns resuscitation is even flimsier. Both the 6S study and the CHEST study excluded burns patients. The VISEP study included 30 patients with burns, and these were the subject of a *post hoc* analysis by Béchir *et al.*^[6] (10 years after the study!); this analysis concluded that the application of hyperoncotic HES within the first 24 hours after severe burns 'may be associated with fatal outcome and should therefore be used with caution'. Not only does the Béchir analysis suffer from the same drawbacks as the initial VISEP study, but analysis of data collected 10 years previously made it even more suspect. This is well borne out by the fact that the patients in the HES group were on average over 13 years older and had a higher prevalence of inhalation injury (both independent determinants of mortality in burns) than those who were resuscitated with saline alone.

An increasingly recognised complication of the resuscitation of patients with severe burns is the development of compartment syndromes, including that affecting the abdomen. A recent review of 50 publications including 1 616 patients quoted prevalences of 64.7 - 74.5% for intra-abdominal hypertension and of 4.1 - 16.6% for abdominal compartment syndrome. The mortality rate for abdominal compartment syndrome in patients with severe burns was 74.8%.^[7] The development of compartment syndrome in burns patients is associated with total resuscitation volumes, and a reduction of the resuscitation volume in the Baxter (Parklands) formula from 4 to 3 ml/kg/% total body surface area has been proposed.^[8,9] Vlachou *et al.*^[10] found in a small study that patients with severe burns who

received part of their resuscitation fluid as HES required less fluid and showed less interstitial oedema than those who received their entire fluid requirements as crystalloid solution. Others have reported similar results with a variety of colloids, including a lower incidence of renal impairment with the use of colloids.^[11,12] A review of fluid resuscitation in patients with severe burns concluded that 'current best evidence supports recommendations to reduce fluid-volume administration through use of colloids or hypertonic saline', especially if the required volumes would exceed a 'volume ceiling'.^[13]

Although none of this provides level I evidence for the use of colloids or HES in early burn resuscitation, the scales are starting to tip in favour of the latter. Meanwhile, the evidence that HES is detrimental seems flimsy. Until large-scale studies are available, decisions to use colloids such as HES are best left to those who have made it their expertise to care for these complex cases.

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