CRITICAL CARE

LETTER

Hydroxyethyl starch 130/0.4 or hypertonic saline solution to decrease inflammatory response in hemorrhagic shock?

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See related research by Chen et al., http://ccforum.com/content/17/4/R141

We read with great interest the study by Chen and colleagues highlighting interest in hydroxyethyl starch (HES) 130/0.4 in treatment after hemorrhagic shock to ameliorate oxidative stress and the inflammatory response in a rat model. Compared with HES 200/0.5 and succinylated gelatin, the authors showed that infusions of HES 130/0.4 significantly reduced malondialdehyde levels and myeloperoxidase activity and also inhibited about 50% of TNF-α production in the intestine [1].

However, we regret the lack of assessment of another resuscitative fluid: the hypertonic saline solution (HTS). In our level 1 trauma center, we chose to use HTS because we have some concerns about HES safety. Indeed, HES may induce coagulopathy and increase risk of renal-replacement therapy [2]. HTS has several advantages due to its osmotic effects. Firstly, it leads to restoration of circulating volume with a smaller volume of fluid. Secondly, it reduces intracranial pressure in case of associated traumatic brain injury [3]. In addition, HTS attenuates the increase in plasma concentration of IL-1β, IL-6, IFN-γ and TNF-α, suggesting that HTS may also limit the inflammatory response to hemorrhage and reperfusion [4]. One of its inconveniences may be the increased risk of acute kidney injury due to hyperchloremic metabolic acidosis decreasing renal blood flow; however, this effect was especially demonstrated when using large amounts of 0.9% saline solution [5].

We suggest that, in 2013, studies on fluid resuscitation should compare all the available resuscitative fluids, and not just HES, currently under concern for safety reasons.

Abbreviations
HES: hydroxyethyl starch; HTS: hypertonic saline solution; IFN: interferon; IL: interleukin; TNF: tumor necrosis factor.

Competing interests
The authors declare that they have no competing interests.

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