Evidence-based medicine: Do we need gelatins and starches?

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Abstract

For more than a decade, systematic reviews have questioned the value of colloids in fluid resuscitation. A Cochrane review that was updated in early 2012 found no mortality advantage relative to crystalloids across a range of conditions for gelatins [risk ratio (RR) 0.91, 95% confidence interval (CI): 0.49-1.72], albumin (RR 1.01, 95% CI: 0.93-1.10), or hydroxyethyl starch (RR 1.10, 95% CI: 0.91-1.32.) Subsequent to that review, two further high-quality randomised controlled trials [Crystalloid vs Hydroxyethyl Starch Trial (CHEST) and Scandinavian Starch for Severe Sepsis/Septic Shock (6S) trial also failed to demonstrate a mortality benefit and raised concerns about renal harm.

This overview looks at the evolution of evidence on colloid use. The issue of what constitutes sufficient evidence to pronounce on lack of benefit is raised, and two further EBM conundrums are explored. Firstly, is it appropriate to continue collecting patient data on harms in the absence of clear evidence of benefit? Secondly, in the absence of convincing mortality advantages for pooled groups of patients with disparate illnesses, is it appropriate to continue subgroup analyses that seek specific groups who may benefit? The roles of biological plausibility and surrogate end-points in guiding decision-making are explored, and ways of using apparently negative evidence to change standard practice addressed.

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