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FLUID MANAGEMENT – A BALANCED APPROACH

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ABSTRACT

The present review of fluid therapy studies using balanced solutions versus isotonic saline fluids (both crystalloids and colloids) aims to address recent controversy in this topic. The change to the acid-base equilibrium based on fluid selection is described. Key terms such as dilutional-hyperchloremic acidosis (correctly used instead of dilutional acidosis or hyperchloremic metabolic acidosis to account for both the Henderson–Hasselbalch and Stewart equations), isotonic saline and balanced solutions are defined. The review concludes that dilutional-hyperchloremic acidosis is a side effect, mainly observed after the administration of large volumes of isotonic saline as a crystalloid. Its effect is moderate and relatively transient, and is minimised by limiting crystalloid administration through the use of colloids (in any carrier). Convincing evidence for clinically relevant adverse effects of dilutional-hyperchloremic acidosis on renal function, coagulation, blood loss, the need for transfusion, gastrointestinal function or mortality cannot be found. In view of the longterm use of isotonic saline either as a crystalloid or as a colloid carrier, the paucity of data documenting detrimental effects of dilutional-hyperchloremic acidosis and the limited published information on the effects of balanced solutions on outcome, we cannot currently recommend changing fluid therapy to the use of a balanced colloid preparation.