

عنوان مقاله:

Comparison of intravenous sodium bicarbonate and sodium chloride combination versus intravenous sodium chloride alone in preventing Amphotericin B nephrotoxicity: a randomized clinical trial

محل انتشار:

دومین کنگره اروپایی آسیایی فارماکوپیدمیولوژی (سال: 1398)

تعداد صفحات اصل مقاله: 1

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خلاصه مقاله:

Introduction The most important adverse reaction of amphotericin B (AmB), a broad-spectrum antifungal agent, can significantly challenge and limit its use in clinical practice is nephrotoxicity. The aim of this study was to assess the potential effectiveness of intravenous sodium bicarbonate and sodium chloride combination versus intravenous sodium chloride hydration in preventing or attenuating different aspects of AmB nephrotoxicity. **Methods:** This randomized, not-placebo-controlled, single-blinded clinical trial was conducted during a 1 year period in two adult hematology-oncology wards of Namazi hospital, Shiraz, Iran. The eligible patients were randomly assigned into either the normal saline alone or saline + sodium bicarbonate groups by the ratio of 1:2 in a singleblinded manner. In the normal saline group, 1000 ml sodium chloride 0.9% (154 meq sodium) was given intravenously at the rate of 1 ml/kg/hr as two equal 500 ml volumes before and during the infusion of AmB. Patients in the saline +sodium bicarbonate group received 500 ml sodium chloride 0.9% (72 meq sodium) before and 500 ml isotonic sodium bicarbonate (72 meq sodium) intravenously during AmB infusion. AmB nephrotoxicity was defined by either doubling of serum creatinine (Scr) from the baseline value or $\geq 50\%$ decrease in glomerular filtration rate (GFR). **Results:** Thirty one subjects including 20 and 11 individuals in the saline + sodium bicarbonate and normal saline groups, respectively, completed the study. Different demographic as well as baseline clinical, and paraclinical characteristics of the study population were comparable between two groups. The rate of AmB nephrotoxicity was comparable

between normal saline alone and saline + sodium bicarbonate groups (54.2% and 41.6%, respectively; $P = 0.3$). This difference did not reach the level of statistical significance after considering AmB dose and duration of treatment. The mean change of Scras well as GFR during the course of AmB treatment did not differ significantly between saline alone and saline + sodium bicarbonate groups. The frequency of hypokalemia and hypomagnesemia did not differ significantly between two groups even after adjusting for AmB dose and treatment duration. Conclusion: The results of the current preliminary clinical trial suggested that the combination of sodium bicarbonate and normal saline compared to normal saline alone co-administration appears to have no superiority in preventing or attenuating different studied aspects of AmB nephrotoxicity in patients with hematological malignancies.

کلمات کلیدی:

Amphotericin B, nephrotoxicity, prevention, intravenous sodium chloride

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