Media Folia Medica Indonesiana
Volume : 45 - No. 1 Terbit : 01-2009

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Comparison of Acid-Base Balance Change in Hypovolemic Shock with 0.9% Normal Saline Therapy and Ringers Lactate. A Controlled Randomized Clinical Test

Abstrak :

Background: Normal saline is often use in shock therapy if Ringers lactate is not available. Some studies reported hyperchloremic acidosis associated with the use of normal saline in shock therapy. Objective: The goal of this study is to know the effect of normal saline compared with Ringers lactate in therapy of hypovolemic shock. Method: This study was carried out in Dept of Pediatric Dr. Soetomo Hospital Surabaya between July - October 2006. The study population was children with hypovolemic shock age between 3 month-12 year old. Study design: double blind Randomized Controlled Trial. Result: 33 children with hypovolemic shock was included in this study, 16 children was treated with normal saline and 17 in Ringers lactate group. There was no significant difference between group in initial data (p>0,05). There were no significant changes of SID, pCO2 and pH before and after treatment of Ringers lactate group. While in normal saline group there was a significant change in SID before and after treatment (p=0.030). There was a significant difference in SID changes before and after treatment between normal saline and Ringers lactate groups (p=0.010). There was also a significant increased of chloride in normal saline group before and after treatment (p= 0.026), although there was no hyperchloremic acidosis was found in this study. Conclusion: Normal saline therapy in hypovolemic shock may cause changes in SID although there was significant change in pH. There was no hyperchloremic acidosis found during this study maybe because of only small volume of normal saline was given.

Keyword :

normal saline, hypovolemic shock, strong ion difference

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