TITLE: HYPONATREMIA IN THE TURP PATIENT: DOES IV FLUID CHOICE MAKE A DIFFERENCE?

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Transurethral resection of the prostate (TURP) while considered to be safer than open prostatectomy, is sometime associated with a sudden hyponatremia near the completion of the procedure. The primary cause is excessive absorption of bladder irrigation of solution through opened venous sinuses of the prostate gland. Along with hyponatremia, this may lead to pulmonary edema, water intoxication, coagulopathies, glycine and ammonia toxicity and hemolysis.

After institutional approval and informed consent, we randomly divided 18 ASA II and III patients into two groups. Each Group received one liter IVF throughout the procedure. Group I received NS while Group II received LR. Anesthesia consisted of SAB with 60-80mg lidocaine with epinephrine. Variables were preoperative Na level (a minimum value of 130 was required for inclusion in this study), postoperative Na level (in RR), total resection time, weight of resected prostate tissue, type and amount of irrigation fluid and amount of IV fluids.

After subjecting the variables to the Fisher exact test and two group t tests, it was determined that there was no significant correlation between post resection Na and type or amount of IV fluids. In addition, there was no correlation between preoperative and postoperative Na. Also, despite over a tenfold difference in the amount of irrigation and weight of resected prostate tissue, these factors did not predict hyponatremia. Finally, total resection time did not correlate with Na levels, although the resection times ranged from 20 to 145 minutes.

In conclusion, preoperative Na levels of 130 or above were not predictive of postoperative Na levels. Additionally, choice or amount of IV fluids, choice or amount of irrigation fluid, resection time or weight of resected tissue did not contribute to significant hyponatremia within the parameters of this study.

References

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A1030

TITLE: RISK OF THIOPENTAL CONTAMINATION

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According to Abbott Laboratories Ltd, after reconstitution, thiopental should be kept only 24 hours to reduce the risk of contamination. However, at this hospital, it is kept until the bottle is emptied in clinical use. There are no studies to support the added cost of removal of partially used bottles after 24 hours. We studied the incidence of bacterial contamination in our thiopental, and surveyed the other 7 hospitals affiliated with the University of British Columbia to determine their protocols for thiopental preparation and storage.

To assess the effect of our practice, we cultured bottles of thiopental in clinical use. Daily, 10ml samples were taken from reconstituted thiopental, which was stored at room temperature on each anesthetic cart. Each sample was labelled with the reconstitution date and a note was made about presence or absence of the cap. The anesthetists were not informed of this collection. The thiopental was drawn through a 0.45 micron filter. The filter was then cultured on a blood agar plate in oxygen for 5 days. A portion of the sample was also assayed for pH.

106 samples were obtained. There were no positive bacteriologic cultures (95% confidence interval: 0-3%). The bottles were in clinical use for from 1 - 25 days (4.23+/- 4.32 S.D.), with 92% of the bottles exhausted within 8 days of reconstitution. There was no evidence of a significant change in the pH of the reconstituted thiopental solutions during the study period. 16% of the bottles from which samples were taken, remained uncapped throughout the study.

The telephone survey of the 8 hospitals affiliated with the university, revealed that only one hospital had a routine policy of following the recommendation to discard thiopental after 24 hours, perhaps reflecting the belief that contamination is unlikely because of thiopental's high pH.

The theoretical reasons for discarding a bottle of reconstituted thiopental are related to concerns about: 1. chemical and physical (pH) stability, and 2. contamination with infectious agents. Our data indicate that the pH remains relatively stable over time as suggested by Jones(1). There is a concern that bacterial contamination may occur in open thiopental bottles resulting in the arbitrary recommendation for discarding after 24 hours. One study(2) inoculated solutions of thiopental, not in clinical use, with 13 different pathogens and found a low potential risk of significant contamination. To our knowledge, there have been no reports of bacterial contamination of thiopental in clinical use despite widely variable practices in the use of the drug. Our study indicates that reconstituted solutions of thiopental can be safely kept beyond 24 hours without refrigeration.

REFERENCES: (1) Am J of Hosp Pharm, 1961; 18:700, (2) J Clin Microbio, 1982; 15:1024.