

# Distilled water as an irrigation fluid in percutaneous nephrolithotomy.

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**Abstract:** INTRODUCTION: The aim of this study was to evaluate the effect of distilled water as an irrigation fluid for percutaneous nephrolithotomy (PCNL) on the serum concentrations of sodium.

**MATERIALS AND METHODS:** A total of ۳۰ patients with kidney calculi underwent tubeless PCNL using distilled water as the irrigation fluid. During the procedure, intravenous Ringer lactate solution was used if necessary. The patients received infusion of two-thirds dextrose ۵% and one-third normal saline solution postoperatively. Four blood samples were taken to determine serum sodium and potassium levels at admission, just before the operation, after the operation, and on the first postoperative day.

**RESULTS:** The mean distilled water used was ۸,۱ L (range, ۵,۶ L to ۱۱,۲ L). Target and complete stone-free rates were ۱۰۰% and ۸۰%, respectively. None of the patients developed hyponatremia. The mean serum levels of sodium (meq/L) were ۱۴۱,۵ (range, ۱۴۰ to ۱۴۳), ۱۴۰,۷ (range, ۱۲۵ to ۱۵۹), ۱۳۹,۷ (range, ۱۲۵ to ۱۶۴), and ۱۳۸,۹ (range, ۱۲۵ to ۱۴۶), respectively ( $P = .۰۰۵$ ). Comparing every ۳ samples, a significant difference was seen only between samples ۱ and ۴ ( $P = .۰۰۵$ ). Serum levels of potassium were all in normal range and there was no difference between the ۴ samples ( $P = .۱۲$ ).

**CONCLUSION:** Our findings showed that using distilled water as an irrigation fluid during PCNL does not result in a clinically significant decrease in the serum level of sodium and can be used if necessary. However, evaluation of the serum sodium level on the postoperative day is mandatory.

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