

LETTER

Postoperative Hyponatremia

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To the Editor: We read with interest the study by Steele and colleagues [1] suggesting that near-isotonic fluid infusion could decrease the plasma sodium level in postoperative patients. They have thus confirmed that the phenomenon in which volume expansion in persons with elevated plasma antidiuretic hormone levels results in a substantial quantity of infused NaCl excreted in the urine [2] also applies to persons who have just had surgery. However, these findings should not suggest that infusion of isotonic (154 mmol of NaCl per L) can lead to postoperative hyponatremic encephalopathy. Among 158 postoperative patients with hyponatremic encephalopathy studied at our laboratory and 31 additional patients described between 1935 and 1990, not 1 patient was given isotonic NaCl [3]. Three were given Ringer lactate solution (130 mmol of sodium per L).

Steele and colleagues showed a mean decline in plasma sodium level of only 4 mmol/L, not a dangerous level [1]. Of note, all patients in this study who developed fatal hyponatremic encephalopathy received hypotonic fluid after surgery. The authors have confirmed our previous finding that brain damage from postoperative hyponatremic encephalopathy occurs primarily in women of childbearing age, particularly after gynecologic surgery [4]. Equally important, however, is the fact that these authors have confirmed that in this susceptible population, plasma sodium levels as high as 126 mmol/L can be fatal. It should be pointed out that hyponatremic encephalopathy may occur not only when the fluid is administered intravenously but also when it is absorbed by way of the uterine lining during endoscopy-assisted vaginal hysterectomy [5]. In summary, although administration of near-isotonic fluid may lead to a modest decrease in plasma sodium level, clinicians should be aware that the routine use of hypotonic fluids in postoperative patients should be avoided.

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