Water balance during parturition and early puerperium: A prospective open trial

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Objectives

To investigate how water balance is regulated during labor and 27 h postpartum.

Materials and Methods

A prospective open trial with 49 women giving birth vaginally. Ringer-acetate was infused intravenously and combined with epidural analgesia in seven women (fluid group). Intravenous infusions of oxytocin in 5% glucose were given to 12 women

(oxytocin group). Thirty women delivered their babies without infusion (nofluid group). Blood and urine samples collected at arrival, at early stage 1 at early stage 2, and at aftercare, and 9, 15, and 27 h postpartum. Plasma osmolality, sodium, cystatin C, vasopressin, oxytocin, urine flow, urine osmolality, and urine sodium were measured.

Results

The oxytocin group had significantly lower plasma osmolality than the nofluid group before parturition, and they had lower plasma sodium concentration at early stage 1 and 2. Plasma vasopressin concentration was low and did not differ between groups or before and after parturition. Water diuresis developed postpartum in all groups. The cystatin C concentration decreased significantly after parturition in the oxytocin and nofluid groups.

Conclusion

The vasopressin levels were suppressed during parturition irrespective of the P-osmolality and the nongravid regulation of water balance had not returned within 27 h postpartum.