

How the Nurse Anesthetist Decides to Manage Perioperative Fluid Status

Honey Calebrant, MNSC, RN, RNAN, Marie Sandb, MNSC, RN, RNAN, RNT, Inger Jansson, PhD, RN, RNT

Purpose: To determine the factors that affect how nurse anesthetists in a county in Sweden decide how to manage perioperative fluid status.

Design: A cross-sectional qualitative study was conducted at two surgical wards in a county hospital.

Methods: Sixteen nurse anesthetists were interviewed to explore how nurse anesthetists assess patients' intraoperative fluid requirements and the subsequent measures adopted.

Finding: Three categories emerged through content analysis: clinical criteria and the thought process that drives decision making, interdependence in decision making, and uncertainty in decision making.

Conclusions: This study revealed differences with regard to fluid management among nurse anesthetists in a county in Sweden. For the assessments and subsequent measures that are carried out to ensure optimal fluid therapy, more research is needed to provide evidence, and evidence-based guidelines need to be developed in Sweden.

Keywords: nursing assessment, fluid therapy, intraoperative, qualitative content analysis.

© 2016 by American Society of PeriAnesthesia Nurses

FLUID THERAPY IS a much debated issue within perioperative care. One meta-analysis shows that restricting fluid treatment leads to a lower frequency of complications such as pneumonia, decreases the impact on postoperative intestinal function, and reduces hospitalization compared with patients who receive liberal fluid treatment during surgery.¹ Another study maintains that restricting fluid treat-

ment can lead to hypotension induced by anesthetics.² Yet another study considers that terms such as high or low volumes do not apply and that fluid therapy should be individualized.³ Current fluid therapy regimens are not evidence based,⁴ and there is a lack of studies focusing on how nurses should proceed to assess and evaluate a patient's fluid requirements during surgery.

Honey Calebrant, MNSC, RN, RNAN, Master student, School of Health and Welfare, Halmstad University, Halmstad, Sweden; Marie Sandb, MNSC, RN, RNAN, RNT, Lecturer; School of Health and Welfare, Halmstad University, Halmstad, Sweden; and Inger Jansson, PhD, RN, RNT, Senior lecturer; Institute of Health and Care Sciences, Sahlgrenska Academy at Gothenburg University, Gothenburg, Sweden.

Conflict of interest: None to report.

Address correspondence to Inger Jansson, Institute of Health and Care Sciences, The Sahlgrenska Academy at Gothenburg University Box 457, 405 30 Gothenburg, Sweden; e-mail address: inger.jansson@gu.se.

© 2016 by American Society of PeriAnesthesia Nurses

1089-9472/\$36.00

<http://dx.doi.org/10.1016/j.jopan.2015.04.005>

Background

Fluid therapy includes different types of crystalloid fluids: sugar solutions, balanced saline solutions, and hypertonic saline solutions. Colloid fluid consists of synthetically produced molecules.⁵ The importance of the choice of fluid is supported in a study by Hildebrandt et al.⁶ They found that a balanced volume of colloid fluid increased the microcirculation in the intestines. Also postoperative nausea and vomiting was reduced if up to 1 L of crystalloid fluids was given preoperatively.⁷ The time when fluid is administered is also important.

A study showed that if 10 mL/kg of crystalloid fluid was administered 20 minutes before placement of epidural analgesia and the same amount when the anesthetic was injected, it resulted in improved protection against hypotension compared with approximately 20 mL/kg of crystalloid fluid administered 20 minutes before injection.⁸

The trauma of surgery can lead to the activation of endocrine and inflammatory responses that influence fluid balance.⁹ Increased antidiuretic hormone secretion can lead to a reduction in diuresis¹⁰ and increased cortisol secretion can affect fluid balance.¹¹ Most general anesthetic methods may cause myocardial depression and have a vasodilatory effect on fluid requirements.¹² General anesthesia can also have a negative impact on microcirculation,¹³ and polyuria may be related to sevoflurane anesthesia.¹⁴

Chappell et al³ stated that the objective of intraoperative fluid therapy is to achieve sufficient blood flow without providing large quantities of fluid leading to additional damage. During fluid therapy, losses of both fluid and plasma should be replaced. The loss of plasma is replaced with colloid fluid if the patient shows signs of changes in blood pressure and pulse frequency.

An integrative review¹⁵ showed that there is a lack of evidence for restrictive and/or liberal fluids. Several studies concluded that intraoperative fluid therapy should be individualized to maintain normovolemia.¹⁶⁻¹⁸ One of many methods of providing fluid therapy to patients is goal-directed fluid management.¹⁹ This method is based on having objectives with regard to specific parameters. Rivers et al¹⁹ and other researchers²⁰⁻²² used central venous pressure, mean arterial pressure, serum lactate level, and venous oxygen saturation as measurable parameters to optimize early fluid therapy.

Because clear evidence-based guidelines are lacking in Sweden, the nurse anesthetist applies different strategies for assessment and subsequent measures concerning intraoperative fluid therapy. The aim of this study was to determine the factors that affect how nurse anesthetists in a county in Sweden manage perioperative fluid status.

Materials and Methods

A qualitative study was conducted in two surgical wards in a county hospital in Sweden. Surgical ward A had eight operating theaters, where they in total performed approximately 650 operations a month. Surgical ward B had 12 operating theaters, where they performed approximately 1,000 operations a month. None of the wards performed trauma surgery.

Design

The study was carried out by means of semistructured interviews with nurse anesthetists working on two surgical wards. The criteria for inclusion were that the nurse anesthetists must have been professionally qualified for at least 2 years; according to Benner,²³ nurses with this level of experience can be regarded as competent.

Sixteen nurse anesthetists, 5 men, and 11 women with professional experience ranging between 4 and 32 years participated in the study. In total, there were 71 nurse anesthetists employed at the two wards. On surgical ward A, there were guidelines concerning fluid therapy for patients undergoing breast surgery, colorectal surgery, and patients with diabetes. There was also a specific document for surgical patients regarding energy drinks before operations and that the patient should have 1 L of crystalloid fluid and 1 L of colloid fluid during the operation. On surgical ward B, there were guidelines for fluid therapy with regard to children and for those undergoing elective knee and hip surgery. All guidelines on both wards were developed exclusively by anesthesiologists without any involvement of nurse anesthetists, and were very general with no algorithms included. No general guidelines on fluid therapy, regardless of the type of surgery, were available on either of the wards.

Data Collection

After approval by the local ethics committee (d-no. 90-2010-514), permission was obtained from the head of each surgical ward. The nurse anesthetists in both wards were then informed of the study, and those who were interested in participating booked an appointment for an interview. All interviews

Download English Version:

<https://daneshyari.com/en/article/5570371>

Download Persian Version:

<https://daneshyari.com/article/5570371>

[Daneshyari.com](https://daneshyari.com)