



Service Priorities and Programmes Electronic Presentations

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Perioperative Normothermia Maintenance: Can We Do better?

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Introduction

Perioperative hypothermia is defined as the patient's core body temperature below 36 degree in the perioperative period. Mild perioperative hypothermia is common during major surgery and increases surgical site infection which lengthens hospitalization. The coagulation cascade is impaired and leads to increase bleeding and transfusion needs. The risk of morbid cardiac events is increased in patients with coronary disease or with high risk factors for such. Vasodilatation from anaesthesia and coupled with the laminar flow in the operating theatres were identified as the main causes of the marked drop in body temperatures within the first hour of anaesthesia. Ineffective insulation of the patient from the laminar flow led to very quick loss of patients' body temperature through convection and radiation.

Objectives

Over the decades, many strategies and change of practices aim to reduce the perioperative hypothermic rate. However, the reported postoperative hypothermic rate is still high in many Hospital Authority hospitals. We reviewed our current interventions and sought for a better way to maintain our patients' body temperature.

Methodology

In addition to ensuring theatre room temperature maintained at least 20 degree, there was increased in number of warming cabinets for warmed irrigation and IV fluid used during operation and for providing warm blanket to every patient on admission. Temperature of cabinet for fluid was revised to 40 degree as referenced from the Emergency Care Research Institute (ECRI institute). We established joint program with ward staff to pre-warm selected patient before coming to Operating Theatre (OT). Another change of practice is to apply active warming devices to patient before GA induction instead of after patient positioning, aiming to create a warmer environment next to the skin surface, so that heat loss is minimal when vasodilatation is induced by the GA medication. We check all patients' body temperature on arrival to the OT and alert Anaesthetist and theatre nurses to ensure the above warming care was implemented. On arrival to Post Anaesthetic Care Unit (PACU) after surgery, temperature monitoring was done following other vital signs monitoring, and warming was given as needed.

Result

Patients' tympanic temperature on arrival to PACU was recorded into the computerized Anaesthetic Information System (AIS) for reviewing the effectiveness of the implementation. Data was retrieved from January to November 2015 indicating a continuously increasing rate of normothermia of patients arriving to PACU, from 72.8% in January to 93.3% in November. The rate of patient's below 35 degree was observed to be decreased from 1.6% to 0.2%. For baseline monitoring, from July to December 2015, patients' tympanic temperature was checked on arrival to OT. 48 patients requiring anaesthesia had body temperatures below 36degree. 25(52%) of these cases became normothermia on leaving operating room and 44(91.6%) cases (excluding direct discharge to ICU) became normothermia on discharge to ward. Remarkably, intraoperative monitoring indicated heat gain after anaesthesia rather than heat loss with normothermia throughout the intraoperative course. It was observed that Anaesthetists and nurses are paying more effort to maintain perioperative normothermia. Perioperative normothermia maintenance is an important performance indicator in OT with important physiological indications. A wiser use of the active warming devices as described can contribute to a great improvement in patient outcome, and the results are encouraging. Compliance to change of practice need time to promulgate, with an improving trend still being observed. Therefore, we definitely can do better in perioperative normothermia maintenance.