

# Revista Española de Anestesiología y Reanimación

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#### **BRIEF REPORT**

## Perioperative temperature control: Survey on current practices<sup>☆</sup>



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#### **KEYWORDS**

Hypothermia; Prevention; Quality health care; Assessment of professional practice; Safety

#### **Abstract**

*Introduction:* Prevention of perioperative hypothermia decreases morbidity and mortality, as well as hospital costs. This study was conducted to evaluate the level of implementation of protocols in 3 tertiary Spanish University Hospitals.

Material and methods: A survey among anaesthesiologists assessed estimated importance and clinical practice in terms of prevention of perioperative hypothermia. Results were compared depending on their experience. p < 0.05 was considered significant.

Results: A total of 116 anaesthesiologists answered the survey, of whom 48 (41.3%) were residents, 32 (27.6%) were staff with less than 10 years of experience, and 36 (31.1%) staff with 10 years or more of experience, In a 0–10 importance scale, prevention of hypothermia was scored  $7.49 \pm 1.79$ , with no difference between groups (p = 0.58). Younger staff were more concerned of the end surgery temperature than other colleagues (p = 0.02). The most usual practice was a combination warming the intravenous fluids and an electric blanket (55%). Only 20% of the anaesthesiologists monitored temperature intra-operatively, even though 75% considered it an important parameter. No unit had a written protocol for prevention of perioperative hypothermia.

Discussion and conclusion: Despite the absence of prevention protocols, the anaesthesiologists were aware of the importance maintaining a normal peri-operative temperature, but this awareness is still not enough to influence their perioperative management to diagnose and prevent hypothermia. A harmonisation of practice at local, regional and national level could improve this practice in the future.

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#### PALABRAS CLAVE

Hipotermia; Prevención; Calidad asistencial; Evaluación de prácticas profesionales; Seguridad

#### Control de la temperatura perioperatoria: encuesta sobre las prácticas actuales

#### Resumen

*Introducción:* La prevención de la hipotermia perioperatoria disminuye la morbimortalidad y el coste hospitalario. Este estudio evaluó su nivel de aplicación en 3 hospitales universitarios españoles de tercer nivel.

*Material y métodos:* Una encuesta entre anestesiólogos evaluó la importancia estimada y la práctica clínica en materias de prevención de la hipotermia perioperatoria. Los resultados se compararon en función de la experiencia. Una p < 0,05 fue considerada significativa.

Resultados: Ciento dieciséis anestesiólogos contestaron a la encuesta, 48 (41,3%) residentes, 32 (27,6%) adjuntos de menos de 10 años de experiencia, y 36 (31,1%) adjuntos de 10 o más años de experiencia. La prevención de la hipotermia fue evaluada con  $7,49\pm1,79$  puntos en una escala de importancia de 0 a 10, sin diferencias entre grupos (p = 0,58). Los adjuntos recién graduados valoraban la temperatura al final de la intervención más que el resto de anestesiólogos (p = 0,02). El calentador de sueros, junto con una manta convectiva fue la medida de prevención más habitual (47%). Solo un 20% de los encuestados monitorizaban la temperatura intra-operatoria, aunque un 75% lo consideraban un parámetro importante. Ninguna unidad disponía de un protocolo de prevención de hipotermia.

*Discusión y conclusión:* A pesar de no existir protocolos de prevención, los anestesiólogos son conscientes de la importancia de la normotermia perioperatoria, pero aún no influye suficiente en su manejo peri-operatorio para diagnosticar y prevenir la hipotermia. Una armonización a nivel local, regional y nacional podría mejorar estas prácticas en el futuro.

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#### Introduction

Until recently in Spain, as in many other European countries, perioperative temperature control was not considered an important parameter.

A number of studies have been published since the end of the last century showing the negative effects of inadvertent perioperative hypothermia, defined as a core body temperature below 36 °C. Hypothermia in this context has been associated with greater morbidity and mortality related to increased incidence of surgical wound infection, cardiovascular events (myocardial ischaemia, arrhythmia), a higher rate of coagulation changes, increased blood loss, longer hospital stays, hospital costs, and higher risk of mortality.<sup>1-7</sup>

In the wake of a growing number of studies on hypothermia and the development of perioperative temperature monitoring devices, various scientific societies and national and international institutions have taken an interest in perioperative hypothermia, and clinical guidelines on the prevention and treatment of this condition have been published.<sup>8–12</sup> However, the extent to which clinicians in Spain are aware of and follow hypothermia prevention and monitoring strategies, and their understanding of the impact of hypothermia on morbidity and mortality, has yet to be determined. <sup>13,14</sup>

The aim of this study is to explore and evaluate, by means of a questionnaire, the practices used by anaesthesiologists from 3 Spanish tertiary teaching hospitals to detect and prevent perioperative hypothermia.

#### Materials and methods

Anaesthesiologists from 3 tertiary teaching hospitals completed the questionnaire during an interview with one of the study evaluators. The questionnaire consisted of dichotomous or multiple-choice questions aimed at evaluating the strategies used to maintain normal temperature and the perceived importance of perioperative hypothermia prevention strategies.

The following parameters were evaluated: experience (in years) of the anaesthesiologist (resident, specialist with less than 10 years experience, and specialist with 10 or more years of experience), existence of standardised protocols for hypothermia management in different types of surgery, measures usually used to monitor intra- and postoperative temperature, and type of warming devices routinely used. We also asked anaesthesiologists to list the types of surgery and clinical situations in which these devices were most important, and the ultimate aim of hypothermia prevention strategies. They were also asked whether they considered it important to measure body temperature before, during, at the end and after surgery. The perceived importance of hypothermia prevention was assessed on a scale of 0–10 points (in ascending order of importance).

The parameters were analysed descriptively, qualitative variables were compared using the chi-square test and quantitative variables were analysed using the ANOVA test. Quantitative variables were analysed both overall and by levels of professional experience. Statistical significance was set at p < 0.05.

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