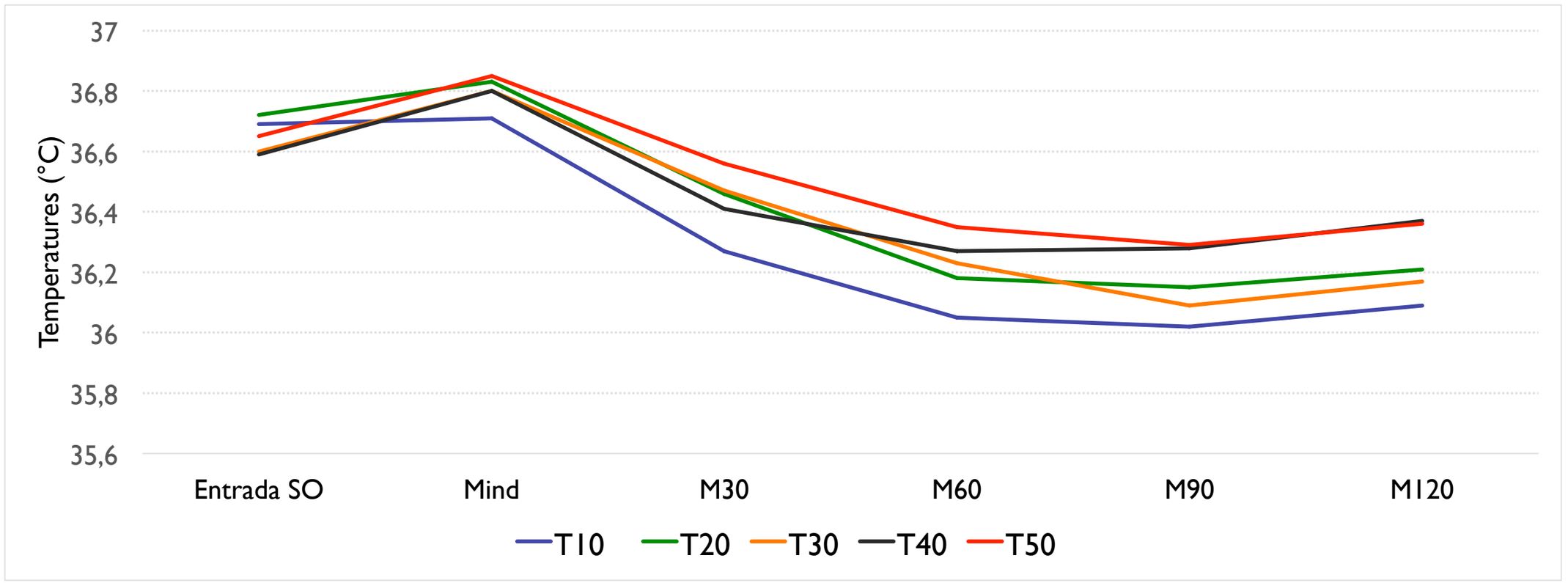
IMPLEMENTATION STRATEGY FOR A PRE-WARMING PROTOCOL IN THE ROUTINE OF A SURGICAL CENTER.

Paiva, EY; Paiva, TTM, MD; Mathias, LAST, MD; Kurz, A, MD; Bernardis, RCG, MD;



Graph 2. Evolution of mean core temperatures of the different groups at the different time points.

Purpose: Unintentional hypothermia is defined as a core body temperature below 36°C. The most frequent warming protocols in major surgeries and/or surgeries lasting more than 60 minutes are active warming methods initialized be the anesthesia team. The goal of this study was to evaluate the adherence to a protocol initiating forced-air warming by the nursing staff in the operating rooms during the immediate preoperative period. We also to assessed the effects of different pre-warming times on intraoperative temperatures, specifically redistribution hypothermia due to induction of anesthesia.

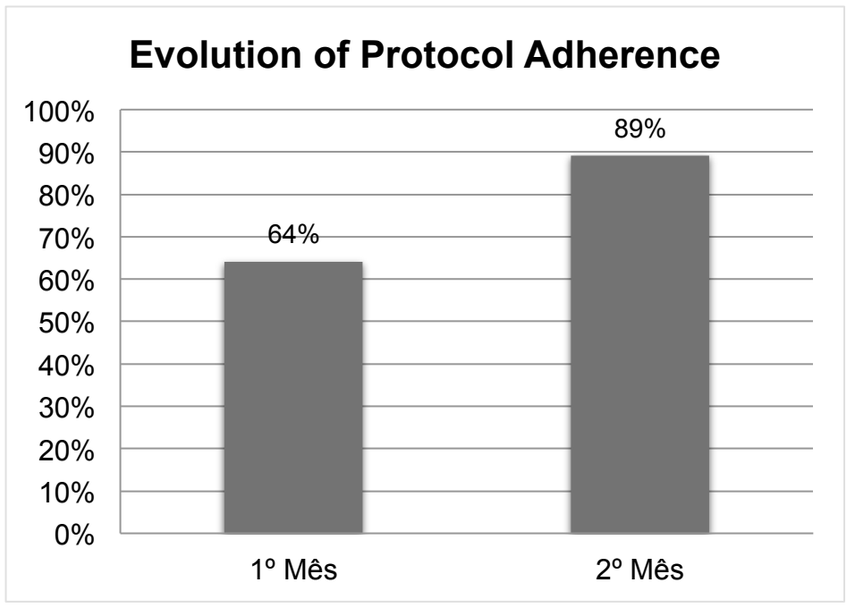
Method: The study was conducted in a surgery center and comprised the development of the pre-warming protocol, training of the nursing staff and data collection in April and May of 2015. Oral thermometers were used for up to 50 minutes during the pre-anesthesia period (depending on length of pre-warming) and esophageal temperatures were measured every 30 minutes throughout anesthesia (starting with intubation). Descriptive analyses of demographic data, core temperatures and types of forced-air warming devices were conducted. We also compared core temperatures at 60 minutes after induction. ANOVA and Tukey's test were used to analyze the core temperatures of the groups. Significant differences were considered significant when $p < 0.05$.

Results: We studies 146 patients. Protocol adherence was 64% in the first month and 89% in the second month of the study. We observed that 30, 40 and 50 minutes of pre-warming resulted in significant decreases in redistribution hypothermia.

TABLE 1. Results of Tukey's test (p) for the comparison of the core temperature values between the studied groups

Momento	P
M_{SO} / M_{ind}	< 0,05
M_{ind} / M_{30}	< 0,05
M_{30} / M_{60}	< 0,05

Graph 1. Evolution of protocol adherence



Conclusion: There was satisfactory adherence to the forced-air warming device placement protocol performed by the nursing team prior to anesthetic induction. The effects of different pre-warming times on intraoperative temperatures shown that the hypothermia occurred in group T10 at the 60, 90 and 120 minute time points, and the groups T20, T30 and T40, hypothermia occurred later at the 90 minute time point. Pre-warming of 30 to 50 minutes significantly reduced redistribution hypothermia.