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Title: THE EFFECT OF ANTIEMETIC DOSES OF DROPERIDOL ON SSEPS

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Intraoperative changes in SSEPs (Somatosensory Evoked Potentials) occur in 2.5-65% of monitored cases,[1-4] although, the incidence of neurological sequelae is felt to be less than 1%.[5] Anesthetics affect SSEPs in a dose dependent manner although the short latency cortical evoked potentials are less influenced by anesthetic factors.

Droperidol in premedicant doses (0.1 mg/kg) has been found to have varying effects on evoked potentials. Grundy et al[6] found that the width of the primary complex increased in the majority of cases while the amplitude decreased. Droperidol had a varying effect on late waves (latency 200-400 msec).The purpose of this investigation was to assess the effect of antiemetic doses of droperidol on SSEPs.

Methods: Under an IRB approved protocol, 10 patients were monitored utilizing SSEPs during elective spinal instrumentation. Stimulation of the posterior tibial nerves and recording of Cz'-A1and Cz'-A2were performed with a Cadwell Quantum 84. For each recording, 250 current impulses of 100 msec duration were averaged. A time base of 160 msec was examined. Anesthesia was induced with pentothal, followed by a loading dose of alfentanil and vecuronium. After intubation, anesthesia was maintained with oxygen mixed with air, isoflurane .5%, and alfentanil 1-1.5 mic/kg/min. Vecuronium .1mg/kg/hr was used for muscle relaxation. Normocapnia and normothermia were maintained. Moderate hypotension was utilized to minimize blood loss. Monitoring was continued in the post anesthesia care unit. Once return to baseline was confirmed, droperidol 0.625 mg was administered intravenously. SSEPs were then monitored for up to 3 hours after the administration.

Results: Uniformly, the administration of antiemetic doses of droperidol did not affect the short latency cortical evoked potentials (P39, N49, P58). Droperidol did, however, affect the longer latency potentials (N76, P117), those thought to arise in the association cortex.(Figure) A 10-15% increase in N76 latency was noted. P117 uniformly increased in latency, decreased in amplitude and in some cases became undetectable.

Discussion: Abrupt changes in anesthetic concentration should be avoided in order to prevent confusion of the SSEP effects of anesthetics with those caused by surgical manipulation. In anticipation of postoperative nausea from narcotic use, prophylactic droperidol is frequently administered. Although, droperidol does affect longer latency SSEPs as shown in this and other studies, the effect of antiemetic doses on short latency postoperative evoked potentials appears to be insignificant.

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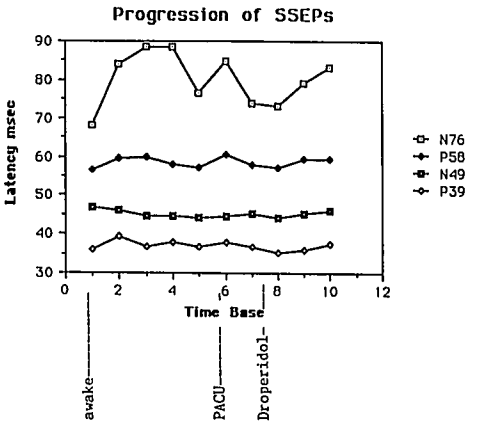

A194

TITLE: DOSE-RESPONSE FOR THERMOREGULATORY SWEATING THRESHOLD AND GAIN DURING ISOFLURANE ANESTHESIA

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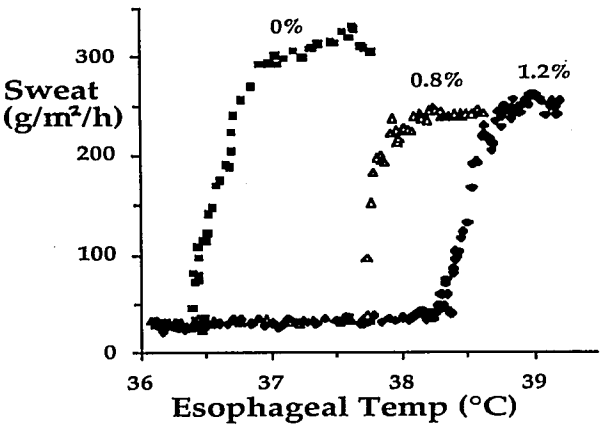
General anesthesia increases the themoregulatory threshold (central temperature triggering response) for sweating from ≈37°C to 38.3 ± 0.3°C during 1.1% isoflurane.[1] To further characterized this response, we evaluated the effects of 0%, 0.8%, and 1.2% end-tidal isoflurane concentration on sweating threshold. With IRB approval, sweating was tested in healthy volunteers not undergoing surgery. Absolute cutaneous sweat rate was calculated from measurements of dry gas flow, relative humidity, regional temperature, and thigh skin-surface area. After induction of isoflurane/oxygen anesthesia, hyperthermia was gradually produced by conductive and convective warming. Hyperthermia was similarly induced in unanesthetized volunteers. Results are shown in the table; a typical sweating dose-response curve in one individual is shown in the figure. These data indicate that isoflurane anesthesia produces a dose-dependant inhibition of the sweating threshold, but that gain (increase in sweat rate/increase in esophageal temperature) of the response and maximum sweating rate appear relatively well preserved.

	0%	0.8%	1.2%
Number	2	3	4
Threshold (°C)	36.8±0.4	37.6±0.1	38.2±0.2

Table: Sweating threshold at 0%, 0.8%, and 1.2% end-tidal isoflurane. The threshold at each concentration were significantly different ($P < 0.01$).



Legend: Sweating rate *vs.* distal esophageal temperature in one volunteer who participated in all three portions of the study.

Reference: Sessler DI: The sweating threshold during isoflurane anesthesia in humans. Anesth Analg, in press.

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