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Title: Invasive Hemodynamic Monitoring In The Management of PIH: A Survey of Practicing Anesthesiologists

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Introduction: Invasive monitoring of arterial pressure, central venous pressure and pulmonary pressures with a PA catheter are often necessary in the management of PIH. The decision to use invasive hemodynamic monitoring is guided by clinical judgement and not by protocol; as such, monitoring practices will vary among clinicians. This survey seeks to describe the use of invasive hemodynamic monitoring among practicing anesthesiologists who care for patients with PIH.

Methods: A 15 question survey was designed with 7 questions looking at demographic data that might influence anesthesia practice and 8 questions looking at specific practice characteristics. Demographic information included questions pertaining to years of anesthesia experience, type of anesthesia practice, obstetric caseload and incidence and severity of PIH. Monitoring practice information included questions on the usage of hemodynamic monitoring. The survey was distributed and collected at two prominent OB anesthesia meetings in 1999.

Results: A total of 327 questionnaires were analyzed. An average of 7.5% of patients with a diagnosis of PIH receives some type of invasive hemodynamic monitoring (a-line, cvp or pa catheter). When invasive hemodynamic monitoring is used 56% of respondents choose a-line, 26% choose a-line and central monitoring, and 20% choose central monitoring only. Only 8% of respondents said when they use central monitoring they always use a PA catheter, 92% of respondents reported monitoring CVP initially. 80% of respondents who initially monitor with a cvp reported that it is their practice to switch to a PA catheter if necessary. The reported incidence of switching to a PA catheter after an initial CVP is 36%. The indications for a PA catheter were CHF 85%, pulmonary edema 80%, oliguria 48%, severe PIH 29%, refractory hypertension 23%, and cardiac disease 12%. When asked what was the most useful monitors for patients with PIH, 47% of respondents said A-line, 23% reported CVP and 23% reported PA catheter. Overall responses were similar for academic and non-academic practitioners.

Discussion: The results of this survey indicate that some type of invasive hemodynamic monitoring is used in 7.5% of patients with the diagnosis of PIH. Arterial line is the most useful and frequently used invasive monitor. When central monitoring is used most practitioners will initially monitor CVP and switch to PA catheter if clinically indicated. Only a small % of practitioners reported using a PA catheter exclusively for central monitoring.

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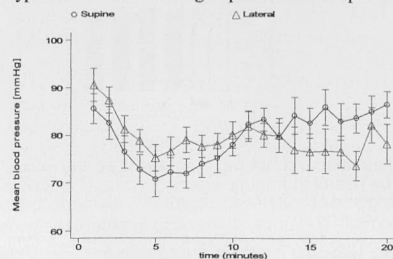
Spinal Anesthesia For Cesarean Section: A Comparison Of The Effects Of Right Lateral And Supine-Wedged Positions On Blood Pressure.

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Introduction: Hypotension occurs frequently after spinal anesthesia for cesarean section.¹ We wished to establish whether, after spinal injection in the left lateral position, assumption of a full right lateral position would result in less hypotension than the supine position with left uterine displacement.

Methods: After Ethics Committee approval and informed consent, 40 women (ASA I/II) received an i.v. preload of balanced salt solution 500ml followed by spinal anesthesia using 2.0ml 0.5% hyperbaric bupivacaine plus 0.2mg diamorphine in the left lateral position for elective cesarean section. They were randomly assigned to be turned to the right lateral position after 2 min (n=20) or the supine wedged position after one minute (n=20). The blood pressure was measured at 1-min intervals for 20 min. After 10 min, all women were placed in the supine position with left tilt. Ephedrine (6 mg i.v.) was given if the systolic blood pressure fell below 80% of baseline. Differences between the groups were analyzed using robust standard errors (38 degrees of freedom).

Results: The two groups were comparable in age, body mass index and block height. In the first 10 min hypotension occurred in 15 women in each group, with no significant difference in ephedrine dose, maximum fall or duration of hypotension between the groups. Mean blood pressures are given in the figure.



Conclusion: The right lateral position has no apparent advantage over the supine-wedged position for maintaining the blood pressure after spinal anesthesia for cesarean section.

Reference 1. Corke BC, et al. Anaesthesia 1982; 37:658-662

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Are lower concentrations of ropivacaine effective for labor analgesia?

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Ropivacaine 0.2% can be used for initiation of labor analgesia. The purpose of this study was to examine lower concentrations of ropivacaine (ropi) for epidural labor analgesia together with fentanyl (fl) and epinephrine (epi).

Sixty ASA I and II term parturients in active labor gave written informed consent and completed this IRB approved study. Upon request for labor analgesia, parturients were randomized to one of 3 groups to receive either ropi 0.2% plain (Group I); ropi 0.15% with fl & epi (both 50µg) (II); or ropi 0.1% with fl & epi (III). All doses were 10 ml total, given as divided doses. VAS pain scores were recorded prior to and at intervals after injection. If patients were not comfortable 15 minutes after injection (VAS pain score >20, or requesting further analgesia), 5 ml of plain ropi at the same concentration as the initial dose were administered; if still uncomfortable at 30 minutes, the study was discontinued. Duration of analgesia was the time to first request for additional analgesia. Degree of motor block (modified Bromage scale 1 - 6¹) was recorded at 30 minutes after injection, as was presence of pruritus or nausea. Data were analyzed with Chi-square, ANOVA, and a posteriori tests.

Groups were demographically similar. At 30 minutes, only 11 of 20 in Gr I, and 14 of 20 in Gr III were comfortable, compared with 18 of 20 in Gr II (Chi-square, p<0.05). In patients who became comfortable, addition of fl/epi did not prolong analgesia compared to the 0.2% ropi group (I) (ANOVA, p=N.S.). Pain relief over time was not different among groups (ANOVA, p=N.S.). Motor block was minimal and not different between groups.

The addition of fl/epi did not increase effectiveness of ropi at lower concentrations. Indeed, the low success rate in the 0.2% ropi group indicates a volume higher than 10 ml is necessary for effective analgesia. The higher success rate in Gr II indicates the addition of fl/epi to undiluted 0.2% ropi may improve analgesic success of lower volumes (i.e., 10 ml). Dilution of ropi to concentrations < 0.2% for initiation of epidural labor analgesia is not effective.

REFERENCES: 1. Anesth Analg 1993;77:919-24.

A92 (Poster 51)

Increased Risk of Obstetric Anesthesia Complications in Medical Professionals and Their Spouses

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Introduction: Anesthesiologists commonly joke that when health care professionals and their families undergo medical care, there is a higher risk of complications. When a complication does occur, the reaction is frequently one of expectation not surprise. There has been interest in whether professional status may influence medical management or complications (1,2). We decided to test the validity of this widely held and stated belief in a prospective, non-blinded clinical data collection.

Methods: Between April 15, 1999, and January 15, 2000 all patients receiving obstetric anesthesia or analgesia care were queried as to their relationship to the healthcare field. On the routine quality assurance form, patients were classified as being physicians (MD), dentists (DDS), nurses (RN), spouse of these professionals (S), or not having a close family relationship to a healthcare professional (N). Complications recorded included intravenous epidural catheter, replaced labor epidural catheter for any reason, inadvertent dural puncture, post-dural puncture headache, failure to obtain CSF during a CSE procedure, any failed regional block, local anesthetic toxicity, and nerve injuries. Patients having more than one complication were presumed to have had just one for the purposes of statistical analysis. Complication rates between groups were compared by χ^2 .

Results: 1952 patients were included in the analysis. There was a greater complication rate in medical personnel and their families (17.8%) than in the control population (11.4%) (p=0.018). Comparing each medical subgroup separately to the non-medical group, the only group which had a significant higher complication rate was the RN group (p=0.004).

	N	MD	DDS	RN	S
n	1779	69	10	51	43
no complication	1577	59	8	38	38
complications	202	10	2	13	5

Conclusion: These results suggest that medical personnel, especially nurses, are at increased risk for the occurrence of obstetric anesthesia complications. The explanation for this finding may be multifactorial. Physicians performing procedures on these patients may perceive and/or treat them differently from others. It is also possible that complications are better reported in these patients. Alternatively, nurses or other health professionals may be more aware of slight "imperfections" in labor analgesia and require more interventions. These results are intriguing and should stimulate further investigation into the ironic occurrence of increased medical complications among health care professionals.

1. Lancet 1998; 352:1038. 2. Lancet 1998; 351:1177.