Anesthesiology
V94, No 1A, Apr 2001

A67

CARDIOTOCOGRAPHIC ABNORMALITIES ASSOCIATED WITH LABOR INDUCTION. *Balintona, J.[1]; Meyer, L.[1]; Ramin, K.[1]; Vasdev, G.[2]; Ramsey, P.[1] 1. Dept. OB/GYN, Mayo Clinic, Rochester, MN; 2. Dept. Anes., Mayo Clinic, Rochester, MN* Cardiotocographic (toco) abnormalities have been associated with intrathecal narcotics. However, induction may be associated with similar changes. To quantify the frequency, character, and timing of these changes during labor induction with 3 commonly used agents (misoprostol, dinoprostone gel, and dinoprostone pessary), we conducted a prospective randomized trial. After IRB approval and patient consent, 111 women undergoing induction of labor with an unfavorable cervix were randomized to receive either Cytotec 50 mg q 6 hours x 2 doses, Prepidil 0.5 mg q 6 hours x 2 doses, or Cervidil 10 mg x 1 for 12 hours intravaginally. Oxytocin induction was initiated per standardized protocol. Toco tracings were independently reviewed by a senior obstetrician who was blinded to the agents used. Abnormalities were coded as hypertonus, tachysystole, and hyperstimulation syndrome using established definitions. 50% of patients treated with Cytotec demonstrated an adverse tracing event within the initial 24 hours of induction, compared with 14% with Cervidil and 11.1% with Prepidil ($P<0.004$, Fischer's exact test). The mean number of adverse events was significantly greater in patients treated with Cytotec (3.5 $\pm$4.3) vs Cervidil (0.4$\pm$0.7) and Prepidil (0.2 $\pm$0.3) ($P<0.01$). In addition, these events occurred earlier following initial Cytotec dosing (5.9$\pm$4.2 hr) and Prepidil (12.2$\pm$5.3) (range 4.2-17 hr). 34% of the Cytotec-treated women had adverse patterns within 6 hours of initial dosing as compared with Cervidil (2.9%) and Prepidil (3.7%) ($P<0.004$). Toco abnormalities are more frequent following misoprostol administration compared with the dinoprostone analogues. The early onset and frequent nature of the tracing abnormalities associated with misoprostol raises concern for the potential use in outpatient practice. When using intrathecal narcotics, induction agents should be taken into consideration.

A68

PERIPARTUM ANESTHETIC AND OBSTETRICAL MANAGEMENT OF PARTURIENTS AFFLICTED WITH CHIARI I MALFORMATION *Meath, A.[1]; Chantigian, R.[2]; Beran-Koehn, M.[2]; Warner, M.[2]; Ramin, K.[1] 1. Dept. OB/Gyn., Mayo Clinic, Rochester, MN; 2. Dept. Anes., Mayo Clinic, Rochetser, MN* Chiari I malformation is a rare developmental abnormality of the central nervous system that involves the downward displacement of the cerebellar tonsils and elongation of the fourth ventricle and lower brainstem.[1] Case reports have raised questions about the safety of spinal and epidural analgesia because dural puncture may worsen the neurological symptoms. [2,3] The aim of our study was to document the type of delivery and anesthesia appropriate for parturients with Chiari I malformation. After IRB approval, a retrospective chart reveiw of all parturients with Chiari I malformations were reviewed. 12 patients with the diagnosis of Chiari I malformation delivered over a 41 year period at our institution. 50% of fetuses may be affected by the same neurological lesion as the mother. In the neonate, the development of syrinx formation requiring shunting has been associated with birth injury. Limited follow-up in our series did not reveal this to be a problem, even though most of our births were vaginal(80%). Of our 12 patients with a total of 31 deliveries, 11 had central neural-axis anesthesia (epidural anesthesia n=7, single injection of a spinal anesthetic n=3 and continuous spinal catheter n=1). None of the patients who received spinal or epidural anesthesia for their deliveries developed symptoms or had exacerbation of preexisting symptoms of Chiari I malformation. The patient who received a 28g continuous spinal catheter developed a post-dural puncture headache that resolved with an epidural blood patch. Our series suggests that spinal or epidural analgesia or anesthesia may be performed in these challenging parturients without an exacerbation of their Chiari I malformation symptoms for both vaginal and cesarean delivery. **Reference:** 1. Jneurosurg 1997;86:40-7 2. Anesth Analg 1992;75;1025-6 3. Ann Neurol 1993; 33:418-21.

BEST PAPER SESSION

A69

PUBLISHED ABSTRACTS IN OBSTETRICAL ANESTHESIA: FULL PUBLICATION RATES AND DATA RELIABILITY *Halpern, S.H.; Palmer, S.; Angle, P.; Tarshis, J. Anesthesia, Sunnybrook and Women's College Health Sciences Centre, Toronto, ON, Canada* **Introduction:** Abstracts (abs) presented at scientific meetings are an important source of information for practitioners and researchers. The purpose of this study was to determine the reliablility of Obstetrical Anesthesia data presented at the American Society of Anesthesiologists (ASA) annual meetings in 1994 and 1995. **Methods:** We identified 145 abs published in the ASA supplements in 1994 and 1995 that were relevant to Obstetrical Anesthesia. Using Medline, EMBASE, and Science Citation Index, we searched forward until April 2000 for peer-reviewed manuscripts (man) that corresponded to the abs. Searches were done in duplicate to ensure that all man were located and that the abs corresponded to the man. The primary outcome was the successful publication of a peer- reviewed man. In addition, we determined the incidence of major and minor discrepancies in the abs data compared to the man. **Results:** 35% of abs (51/145) were subsequently published. Only 38% of man (n=19) had data that was entirely consistent with that found in the abs. 12 abs contained major differences (>10% difference in the primary outcome) when compared to the corresponding man, 9 contained minor differences (< or = 10%). 6 abs contained major differences in a secondary outcome and 6 contained minor differences. Of interest, 1 abs contained a typographical error yielding a result that was 10 fold greater than that found in the man. **Conclusions:** Only 35% of abstracts in Obstetrical Anesthesia are published as peer-reviewed manuscripts. This is similar to abstracts in other specialties in medicine (26%(1) to 66% (2)) . The information contained in abstracts should be treated as preliminary results. This data should not be used to change practice, for systematic reviews or to set research agendas without confirmation of accuracy. **Reference:**1) J Burn Care Rehab 1996;17:23A-26A 2) JAMA 1994; 272:158-162.

A70

ALLOPREGNANOLONE PROTECTS AGAINST NMDA-INDUCED CELLULAR INJURY IN HUMAN NT2-N NEURONS *Lockhart, E.M.[1]; Boustany, R.[1]; Pearlstein, R.[1]; Warner, D.[1]; Penning, D.H.[2] 1. Division of Women's Anesthesia, Departments of Pediatrics, Neurobiology, and Surgery, Duke University Medical Center, Durham, NC; 2. Department of Anaesthesia, Sunnybrook and Women's College Health Sciences Center, University of Toronto, Toronto, ON, Canada* Fetal brain tolerates substantially lower PO_2 values than neonatal brain, and fares better after neurologic insult. This may be attributable to the hormone progesterone, which is rapidly withdrawn in the fetus after birth. Allopregnanolone, (3α-hydroxy-5α-pregnan-20-one), a neuroactive metabolite of progesterone, is a potent ligand of the GABA receptor, and has many neuroactive properties. We hypothesized that exposure to Allopregnanolone, prior to the excitotoxin NMDA, would attenuate this cytotoxic cell death in our neurons. The human teratocarcinoma cell line (NT2) was induced to differentiate into neurons (NT2-N) in the presence of retinoic acid and then treated with mitotic inhibitors. These NT2-N cells have a neuronal morphology, and express functional glutamate and GABA receptors. The neurons were incubated with 10μM or 20μM allopregnanolone for 30 min prior to a 20 min exposure to 1mM NMDA. Cell injury was then assessed after 24 hours with an LDH assay performed on the overlying media. A protective effect by Allopregnanolone was observed. Allopregnanolone (at the 10μM)concentration produced a 54% ($p=.0009$*) reduction in total LDH release, while the 20μM concentration produced a 35% ($p=.1756$) reduction in total LDH release. The protection provided by the 10uM allopregnanolone concentration was similar in magnitude and not statistically different from that produced by MK801 ($p=.3753$), the selective NMDA-receptor antagonist. Current studies are investigating the role of Allopregnanolone in attenuating apoptosis, as excitotoxin-mediated injury is an important cause of delayed apoptotic neuronal death following ischemia. *EML is a 1999 FAER/SOAP New Investigator Award Recipient