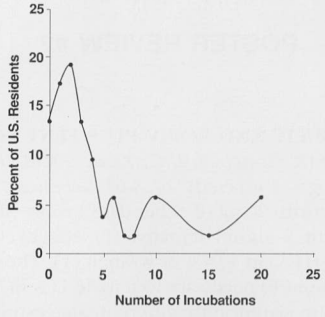
ORAL SESSION #1

A31

GENERAL ANESTHESIA FOR CESAREAN DELIVERY. THE STATUS OF CURRENT RESIDENT TRAINING AND EXPERIENCE. *Bhavani-Shankar, K.; Camann, W. Anesthesiology, Brigham and Women's Hospital, Boston, MA* Maternal risk is greater with general anesthesia than with regional, and this has resulted in a decrease in cesarean delivery performed under general anesthesia (3.6%)(1,2). As a result, residents in training may not gain adequate experience that might be required when they encounter an emergent cesarean delivery with or without difficult airway (3).The purpose of this study is to determine the level of exposure to obstetric general anesthesia during anesthesia resident training programs. A questionnaire consisting of the following (Number of intubations done for C/D or during third trimester; Number of intubations seen; Indications for C/D) was mailed to 25 faculty heads of obstetric training institutions in United States for distribution among residents. A similar questionnaire was also sent to European and Asian trainees. **Results:** 52 residents from 20 institutions in United States replied. Responses were also obtained from 15 overseas trainees so far. The mean number of intubations performed by US residents is 4.2(SD4.9). 71% of residents have performed </=5, and 65% </=3. 13% of residents have not had an opportunity to administer general anesthesia to a parturient at term during their training. The mean intubation score at our institution is 1.7(SD1.5). For oversees residents, the intubation score is 80(SD25).The disparity in these intubation scores is probably due to substantial variability in the availability and the use of regional anesthesia, local practice patterns, or other confounding variables. **Reference:** (1) IJOA 1998;7:145-6. 2) IOJA 1998; 7:147-52.(3) Anaesthesia 2000;55:163-83.



A32

VALIDATION AND APPLICATION OF NIRS TO MEASURE *IN UTERO* FETAL SHEEP CEREBRAL OXYGENATION DURING MATERNAL GENERAL ANESTHESIA *Reynolds, J.D.; Schultz, J.R.; Amory, D.W.; Punnahitananda, S.; Benni, P.B.; Eubanks, W.S.; Booth, J.V. Anesthesiology and Surgery, Duke University, Durham, NC* Common reasons for maternal general anesthesia during pregnancy are emergent cesarean-section and non-obstetric related surgery. In both situations, fetal organs, especially the brain, are or can be compromised with respect to the supply and exchange of oxygen. Near-infrared spectroscopy (NIRS) is a spectrometric method of measuring tissue oxygenation and blood flow by recording change in the amount of oxygenated, de-oxygenated, and total hemoglobin in the region of interest. A NIRS device was designed for *in utero* use to continually-assess fetal cerebral oxygenation in surgically-recovered near-term pregnant sheep. The device was validated by monitoring fetal cerebral oxygenation during episodes of partial and full umbilical cord occlusion. Then, in a separate series of animals, cerebral oxygenation was measured before and during maternal general anesthesia with 1.25% isoflurane in oxygen. Almost immediately after induction-intubation, fetal cerebral oxygenation decreased. Anesthesia also appeared to reduce fetal cerebral blood flow as measured by a decrease in fetal cerebral total hemoglobin. In contrast, systemic fetal arterial blood oxygenation levels did not change during the study. This preliminary result suggests general anesthesia can alter the amount and supply of oxygen to the fetal brain. It is important to note that the study was conducted using healthy sheep fetuses. It remains to be determined what additional affects general anesthesia may have on fetal cerebral oxygenation during an episode of fetal distress. Sponsored in part by the U.S. Department of the Army and the NMTB. "The views, opinions and/or findings contained in this report are those of the authors and should not be construed as a position, policy, decision or endorsement of the Federal Government or the National Medical Technology Testbed, Inc."

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