REPORT OF A SCIENTIFIC MEETING

James C. Eisenach, M.D., Editor

Society for Obstetric Anesthesia and Perinatology.

Sally K. Weeks, M.D., McGill University School of Medicine, opened the 28th annual meeting of the Society for Obstetric Anesthesia and Perinatology with warm words of welcome. She then introduced Alan Santos, M.D., who moderated the Gertie Marx Resident Research presentation. Santos highlighted important aspects of Marx’s long career in obstetric anesthesia and then introduced the authors of five diverse papers, which covered important topics in basic science and clinical anesthesiology. They set the tone for a presentation of excellent research in obstetric anesthesia.

The “Pharmacokinetics and Effects of Intrathecal Fentanyl for Labor Analgesia” by Mino and colleagues, New York University, examined the effects of two bolus doses of 25 μg intrathecal fentanyl. Cerebrospinal fluid concentrations exceeding 200 ng/ml were associated with the onset of analgesia. Cerebrospinal fluid fentanyl concentrations were higher after the second dose, which, the authors believed, contributed to a greater incidence of side effects observed with that dose. Pain recurred when fentanyl concentrations decreased to less than 15 ng/ml.

Osborn and coworkers, University of Iowa, examined “The Effect of ACEA-1021, an NMDA Glycine Receptor Antagonist, on Lidocaine Induced Seizure Thresholds in the Rat.” Previous work has shown that competitive NMDA glutamate and NMDA receptor antagonism increases the seizure threshold in laboratory animals. A dose-dependent relationship between ACEA-1021 administration and tolerance to increasing levels of lidocaine was noted in their animal model. The third study, “Progesterone Decreases the MAC of Desflurane in the Non Pregnant Ewe,” was presented by Thompson and collaborators, Ochsner Clinic, New Orleans. They noted that the minimum alveolar concentration for pregnant ewes and that for nonpregnant ewes treated with progesterone were similar. The minimum alveolar concentration of desflurane in untreated nonpregnant ewes was greater than in the other two groups.

The “Influence of Epidural Fentanyl Infusion on Gastric Emptying,” presented by Porter and colleagues, St. Thomas’s Hospital, London, challenged previous work that suggested that epidural fentanyl delays gastric emptying, as measured by actinmophen absorption, in laboring women. A bolus dose of bupivacaine followed by 4-h infusions of bupivacaine with and without fentanyl were not found to affect gastric emptying. The authors suggested that further studies with more prolonged infusions might be necessary.

Southard and coworkers, University of Saskatchewan, presented the last paper in the resident competition, “Intra-abdominal CO₂ Insufflation in the Pregnant Ewe: Uterine Blood Flow, Intra-amniotic Pressure, and Cardiopulmonary Effects.” In a randomized, crossover study design, they noted that the maternal arterial to end-tidal carbon dioxide gradient increased, maternal mean arterial pressure decreased, and maternal Pao₂ decreased after carbon dioxide insufflation to a pressure of 15 mmHg. Fetal mean arterial pressure was noted to increase along with a decrease in fetal Pao₂, perhaps as a result of a decrease in uterine blood flow. The authors suggested that their results warrant aggressive monitoring of maternal acid/base status during laparoscopic procedures with intraabdominal carbon dioxide insufflation during pregnancy.

The annual Fred Hebre lecture was delivered by Donald Melzack, Ph.D., McGill University. The SOAP membership was treated to a remarkable and memorable experience as Melzack, a world-renowned figure in the field of pain and its neuromodulation, spoke about his experience with patients suffering from phantom limb pain. The lecture included wonderfully lucid descriptions of the neuroanatomical pathways mediating phantom phenomena, with emphasis on the importance of the spinal cord in the development of this syndrome. Melzack’s lecture was a brilliant mixture of the latest themes in neuroanatomy, including the influence of the neuroendocrine system, combined with thoughts on ancient philosophical concepts and Cartesian correlates of pain.

Three other lectures were given Friday and Saturday highlighting advances in obstetrics, pediatrics, and obstetric anesthesia. The annual “What’s New in Obstetrics” lecture was given by Dennis Davidson, M.D., College of Medicine, Department of Neonatal-Perinatal Medicine. He described some of the latest clinical uses of nitric oxide as an inhaled agent for the treatment of pulmonary hypertension in the newborn. When one considers that, only a few years ago, most physicians had not heard of nitric oxide, it was enlightening to see how this agent has become the focus of a great number of clinical investigations as a potent pulmonary vasodilator.

The “What’s New in Obstetrics” lecture was delivered by Dr. Ilan Timor-Tritsch, a world-recognized leader in the field of fetal ultrasonography. Timor-Tritsch’s extensive experience in prenatal diagnosis was evident as the audience was shown a vast array of ultrasonographic pictures displaying examples of fetal anomalies. It is clear that ultrasonography is a highly advanced field allowing extremely early detection of complex in utero fetal problems. His lecture addressed the controversial issue of routine prenatal ultrasound, and his impassioned defense of this technology was convincing.

The “What’s New in Obstetric Anesthesia” lecture was delivered by Holly Muir, M.D., Dalhousie University, Halifax, Nova Scotia. This whirlwind tour through the obstetric anesthesia related literature of 1994 gave the lasting impression that this is an active field with much new and interesting research, all clinically relevant.

Eighteen oral papers of high quality were presented during three sessions. It is beyond the scope of this review to detail each one. so only a few will be discussed. Hood and colleagues, Bowman Gray University, noted that intrathecal neostigmine augmented pain relief provided by continuous intravenous infusion of alfentanil, at the expense of increased nausea in human volunteers. Ongoing controversy concerning the effects of epidural analgesia on cesarean section rates lead Birnbach and colleagues, St. Luke’s Hospital, New York, to retrospectively review their data of 11,000 epidural anesthetics performed between 1991 and 1993. They found that the cesarean section rate had remained the same (about 25%) although the epidural rate had more than doubled over that period. The laryngeal mask airway has been suggested by many as an aid in dealing with difficult airway and failed intubation. Dalemaida and coworkers, University of Texas, Galveston, used ultrasonography in 15 nonpregnant women to examine the question, “Does Application of Cricoid Pressure after Insertion of the Laryngeal Mask Airway Occlude the Esophagus without Displacing the Airway?” In this preliminary report, they stated that, when the laryngeal mask airway is inserted correctly, cricoid pressure effectively occludes the esophagus and does not disrupt the position of the laryngeal mask airway. Shennan and colleagues, Queen

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Charlotte's Hospital, London, looked at maternal blood pressure and fetal heart rate changes during epidural analgesia for labor in patients allowed to ambulate. Forty women had blood pressure and pulse measured in the standing position, and an additional 10 women had blood pressure measured in both the prone and standing positions. Patients who were prone were found to have significant declines in systolic blood pressure after epidural dosing, possibly because of aortocaval compression, whereas blood pressure remained unchanged for those in the standing position. Fetal heart rate tracings did not show significant differences between the lying and standing groups. McArthur, University of Toronto, working with Weeks, followed patients for 1 yr after epidural analgesia and looked at the incidence of back pain. There was no difference in the frequency of this complication when the epidural and nonepidural groups were compared. Koteklo and colleagues, Cedars-Sinai Medical Center, Los Angeles, examined the effects of labor analgesia on neonatal sucking behavior after delivery. When compared to intravenous fentanyl analgesia during labor, epidural analgesia, using bupivacaine with or without fentanyl, was not associated with decreases in neonatal sucking behavior. In contrast, sucking was diminished in neonates whose mothers had received intravenous fentanyl.

An additional 75 papers were presented as posters. A few of those excellent papers are highlighted here. Work by Shenman and colleagues, University of Pittsburgh, examined whether an intravenous fluid bolus of lactated Ringers before subarachnoid fentanyl altered maternal hemodynamics. They concluded that intravenous fluid administration failed to prevent the reduction in blood pressure that accompanied the intrathecal administration of 25 μg fentanyl. In related work, Eberle and colleagues, Thomas Jefferson University, Philadelphia, noted that plasma catecholamine concentrations decreased precipitously after intrathecal administration of sufentanil. In another work, Walker et al., Stanford University, compared intrathecal sufentanil and bupivacaine with regard to changes in maternal body temperature and blood pressure. They noted a decrease in the central to toe temperature difference in the bupivacaine group, indicating the presence of a sympathectomy, a change not present in the sufentanil group. They hypothesized that the decrease in blood pressure after intrathecal opioids was not the result of sympathectomy but may be related to pain relief alone.

Rasmussen et al., from Cedars-Sinai Hospital, Los Angeles, examined whether use of subcutaneous bupivacaine before skin incision was effective in decreasing postoperative pain in patients undergoing elective cesarean section under spinal anesthesia. The authors failed to demonstrate any clinical benefit from prophylactic anesthetic infiltration. Work by Holdcroft et al. verified the safety of epidural anesthesia for labor and delivery. In a study of about 48,000 women, 35 notifications of neurologic deficit were received and were evaluated by an independent panel. One parturient of 13,000 who received epidural anesthetics had neurologic dysfunction considered anesthesia-related. Newman and colleagues reviewed their delivery data for 18,000 births between 1988 and 1994. They observed an increase in the use of neuraxial labor analgesia from 40% to 74% with an associated increase in the cesarean delivery rate. They suggested that neuraxial labor analgesia has not altered cesarean delivery rate in their patient population. Gaiser and colleagues, in a multinstitutional study from the University of Pennsylvania and the University of Cincinnati, compared the clinical efficacy of 0.25% ropivacaine and 0.25% bupivacaine for labor analgesia. They noted almost no differences between the two drugs in the quality and onset of pain relief nor in maternal and fetal outcome.

Stuart Bramwell, M.D., Emory University, moderated the last panel of obstetricians and obstetric anesthesiologists who discussed problems encountered in providing intensive care to obstetric patients. Bramwell stated that the physiologic differences in the pregnant versus the nonpregnant woman serve to confuse therapy and make interpretation of hemodynamic data difficult, therefore requiring personnel who understand the physiology of pregnancy to care for these patients appropriately. He discussed the political problems associated with obstetric intensive care that also make that care more difficult to render. Jack Huddleston, M.D., Emory University, and Valerie Parisi, M.D., SUNY, Stony Brook, both outlined problems in the care of patients who have HELLP syndrome or cardiac disease. McCallum Hoyt, M.D., and David Birnbach, M.D., finished the presentation with discussions of cardiac disease and drug abuse in parturients, conditions that often require intensive care therapy.

The 1996 SOAP meeting will be held in Tucson, Arizona, May 1–4, 1996.

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