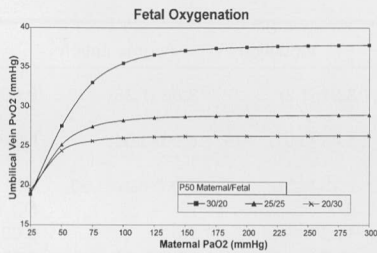


A36 (Poster 26)
RIGHT AND LEFT SHIFTS OF HEMOGLOBIN DISSOCIATION CURVES: WHY PLACENTAL OXYGEN TRANSPORT IS NOT HOKEY POKEY *Glassenberg, R.¹; Glassenberg, S.Z.²* 1. *Anesthesiology, Northwestern, Chicago, IL*; 2. *Electrical and Computer Engineering, University of Illinois, Champaign, IL* **Introduction:** Maternal hyperventilation can affect fetal oxygenation by decreasing uterine artery blood flow and increasing the affinity of maternal hemoglobin for oxygen. If placental oxygen transport is dependent primarily on the difference of maternal and fetal oxygen partial pressures, how can this phenomenon be explained? **Method:** A system of two linear differential equations was solved, taking into account the blood flow (Q), slope (M) of maternal and fetal hemoglobin dissociation curves, and the effect of pH and PCO₂ on P50. $dP_m/dx = k/QmMm (P_f - P_m)$ $dP_f/dx = k/QfMf (P_m - P_f)$ **Conclusion:** (1) When corrected for fetal pH=7.25 and maternal PCO₂=35 the P50's overlap. (2) Adequate pain control during labor can prevent the adverse effects of maternal hyperventilation. (3) Treat maternal hypotension before applying oxygen. (4) Fetal PO₂ cannot exceed maternal mixed venous. **Reference:** *Anesthesiology* 1974; 40: 340-347. *International Journal of Obstetric Anesthesia* (1995) 4, 230-237



A37 (Poster 27)
DESFLURANE VERSUS ISOFLURANE FOR FETAL SURGERY *Galinkin, J.L.; Myers, L.B.; Gaiser, R.R.* *Anesthesiology, Children's Hospital of Philadelphia, Univ of PA, Philadelphia, PA* **Introduction:** Isoflurane, a halogenated volatile anesthetic, is the standard drug used for maintenance of general anesthesia during fetal surgery requiring hysterotomy.¹ The low blood/gas solubility of desflurane may make it desirable for use in these procedures due to its ease of titratability. We compared general anesthesia with either isoflurane or desflurane in parturients undergoing fetal meningomyelocele (MMC) repair looking specifically at MAC multiple required for uterine relaxation, time to extubation and vasopressor support required. **Methods:** After IRB approval, we retrospectively reviewed the computerized operating room record of 31 consecutive women who underwent MMC repair from 11/98-1/01. Records were examined for demographic data, maximum MAC dose of inhalation agent, total of intravenous drugs used, and time from both uterine closure (UC) and procedure finish (PF) to extubation. Comparisons were made using an unpaired t-test. P<0.05 (*) was considered significant. **Results:** Demographics were similar between groups. The table demonstrates that parturients undergoing fetal MMC repair with desflurane require a lower maximum MAC concentration of agent, have a reduced time to extubation and have higher minimal fetal heart rates in comparison to parturients undergoing isoflurane based anesthetics. **Discussion:** Desflurane based general anesthesia provides effective uterine relaxation for fetal surgery and allows a more rapid time to extubation than an isoflurane based technique. Additionally, the use of desflurane may cause sympathetic activation in the fetus contributing to a higher FHR during the procedure. **Reference:** 1. Chestnut D.H. *Obstetric Anesthesia* 2nd ed., 1999

Drug (N)	Max MAC conc. used	Ephedrine (mg)	UC-Extubation (min)	PF-Extubation (min)	Min FHR (bpm)
Isoflurane (12)	2.4±0.3*	80±43	42±5*	9±5*	142±6*
Desflurane (19)	1.8±0.2	56±37	33±5	4±3	157±18

A38 (Poster 28)
DO PROPHYLACTIC EPIDURAL BLOOD PATCHES DECREASE THE RATE OF THERAPEUTIC EPIDURAL BLOOD PATCHES? *Pue, A.F.* *Anesthesia, Mary Birch Hospital for Women, San Diego, CA* **Introduction:** The therapeutic epidural blood patch (TEBP) rate, as collected by the hospital's Coding Department, is a good clinical indicator for obstetrical anesthesia.⁽¹⁾ We have collected yearly TEBP data since 1994. In 1998 and 1999, with IRB approval, we documented unintentional dural puncture (UDP) and prophylactic epidural blood patch (PEBP) for every obstetric anesthesia case, using a self-reporting form. In 1998, we also started using large volume prophylactic epidural blood patches (PEBP) after UDP to try to reduce the TEBP rate.⁽²⁾ **Method:** As soon as the block receded, we gave consenting patients with UDP, but no coagulopathy or fever, 20-30 ml of homologous blood through the proven epidural catheter. Our indications for TEBP were consistent during the study period. We manually entered all data into Microsoft Access. **Results:** During 1998 and 1999, our UDP rate remained the same (Table 1/col B), our PEBP rate doubled (1/C), and our TEBP rate dropped from 0.27% to 0.07% (1/D). The percentage of TEBP in those who received PEBP dropped from 30% to 16% (1/E). However, the percentage of TEBP in those who did NOT receive PEBP dropped from 50% to 0% (1/F). There were no adverse affects from the PEBP or the TEBP. **Conclusion:** This study does not answer the question, "Do PEBP decrease the TEBP Rate?" Until we can collect large numbers of clinical indicators automatically, we will not get a definitive answer. Our clinical impression, however, is that PEBP are effective. Since the risks and side effects are low and the compassionate and economic benefits are so high, we will continue to use PEBP. **Reference:** 1. Pue A, et al. SOAP abstract #83, 1998 2. Check TG, et al. *BJA* 61:340-2, 1988

Table 1	A-Ob. Epidurals #	B.UDP # (%)	C. PEBP # (%)	D. TEBP # (%)	E. TEBP/PEBP ratio	F. TEBP/No PEBP ratio
1998	4764	24 (0.5%)	10 (0.2%)	13 (0.27%)	3/10 (30%)	7/14 (50%)
1999	4494	27 (0.6%)	19 (0.4%)	3 (0.07%)	3/19 (16%)	0/8 (0%)