

ISO-2-5 The impact of postpartum contraception on repeat pregnancy

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Objective : To determine the rate of repeat pregnancy within 24 months and how method of contraception at discharge and 6 weeks postpartum affects this rate.

Methods : The first 300 deliveries of 2008 resulting in a live infant were identified from our hospital's birth registry. A chart review was done to collect demographic information, contraception at discharge and 6 week postpartum, and repeat pregnancy rate with 12 and 24 months. If the information was not available from the chart, an attempt was made to contact the patient via telephone. Repeat pregnancy rates were compared for different methods of contraception.

Results : Data were available for 167 (56%) patients at 12 months and 164 (55%) patients at 24 months. Of these women, 27% became pregnant within 12 months and 48% by 24 months. Women who became pregnant again within the study time period were more likely to be younger than those who did not (24 compared with 27 years old ; $p = 0.015$). No demographic factors were associated with repeat pregnancy. Depo-Provera at discharge was associated with a decreased rate of repeat pregnancy within 12 months compared to anything else excluding sterilization (14% compared with 33% ; $p = 0.042$), but this effect was not significant by 24 months (37% compared with 55% ; $p = 0.136$). All other reversible forms of contraception at discharge and 6 weeks postpartum were not associated with repeat pregnancy rate.

Conclusion : Reversible contraception at discharge and 6 weeks postpartum did not affect repeat pregnancy rate by 24 months postpartum.

ISO-3-1 In utero inflammation induces structural alterations in the fetal ovine skin

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Objective : Inflammatory cytokines involved in preterm birth are also known to modulate epidermal development. Preterm infants exhibit compromised barrier function proportional to the degree of their prematurity. Using an ovine model of in utero inflammation, we asked if in utero exposure to O55 : B5 E. coli lipopolysaccharides (LPS) would induce structural changes in the fetal ovine skin.

Methods : Date-mated merino ewes were randomised to receive either 10 mg LPS in 2 ml saline ($n = 6$) or 2 ml saline ($n = 6$) via ultrasound guided intraamniotic injection. Fetuses were surgically delivered under terminal anaesthesia after 2 d and skin collected from the inner left thigh for RNA and histological analyses. Only female lambs were included in the LPS group to control for potential sex-linked effects. Changes in mRNA expression for makers of epidermal differentiation : involucrin, filaggrin, occludin, keratin 5 and keratin 14 were assessed using quantitative PCR. Changes in the spatial expression of these proteins were assessed using immunohistochemistry.

Results : mRNA expression (fold change ; SEM) increased for involucrin (1.78 ; 0.25), filaggrin (2.17 ; 0.59), occludin (1.63 ; 0.22), keratin 5 (1.88 ; 0.25) and keratin 14 (1.33 ; 0.13). dCq analysis using one-way ANOVA demonstrated a statistically significant difference in involucrin ($p = 0.037$), occludin ($p = 0.037$), and keratin 5 ($p = 0.025$). Immunohistological preparations demonstrated increased spatial expression and staining intensity for all proteins assayed.

Conclusions : Inflammation is known to regulate epidermal development in the fetus. These data demonstrate that LPS-induced inflammation elicits accelerated epidermal stratification in the ovine fetus. The functional implications of these changes remain unstudied ; however, we suggest that the inflammatory stimuli responsible for preterm birth may also modulate the defective epidermal phenotype seen in the preterm infant.

ISO-3-2 A single-center experience on the use of Sengstaken tube for management of severe postpartum hemorrhage

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OBJECTIVE : We aimed to evaluate the usefulness and to share our experience in the use of Sengstaken tube in the management of severe postpartum hemorrhage (PPH).

METHODS : Cases delivered in our department in the past 2 years (from September 2009 to August 2011) complicated by severe PPH managed with Sengstaken tube was reviewed. Cases were identified by searching the electronic clinical system with the procedure identifier of "Insertion of Sengstaken tube". The clinical details were then obtained by reviewing the case notes of individual patient. In indicated cases, the Sengstaken tube was inserted under septic technique with antibiotic cover into uterine cavity guided by ultrasound, or into vagina depending on site of bleeding. The Esophageal balloon was inflated by normal saline until no more bleeding clinically. It was left in-situ for at least 6 hours and no longer than 24 hours before removal. The annual delivery rate in our unit is about 6000.

RESULTS : In the past 2 years, a total of 6 cases were managed with Sengstaken tube for severe PPH (blood loss ranging from 2300 to 4500ml ; red cell transfusion ranging between 8 and 18 units). Three cases (50%) happened at night time. It was the first pregnancy for 4 cases (67%). One patient had 3 previous vaginal deliveries and 4 prior pregnancy terminations. In the index pregnancy, 3 (50%) had spontaneous vaginal delivery at term, one vacuum extraction to shorten second stage of labor for maternal pre-eclampsia, one elective caesarean for twin pregnancy with presenting twin in breech and one emergency caesarean at 32 weeks for abruption placentae with maternal shock on admission. The one delivered by vacuum extraction was also a twin pregnancy. The birth weights range from 193 to 328kg (mean 253kg). The causes for PPH varied, including atony limited to lower segment in 2 cases, and for rest, global uterine atony, extensive vaginal tear with friable maternal tissue, huge submucosal fibroid 10cm in size and placental abruption to the degree of maternal shock respectively. Three (50%) were so severe that disseminated intravascular coagulation (DIC) set in. The amount of normal saline infused into the esophageal balloon of Sengstaken tube before bleeding could be stopped varied between 180-420ml. For the case with extensive vaginal tear, the balloon was inflated inside the vagina. For the case with submucosal fibroid, two sengstaken tubes were used, for tamponade inside uterine cavity and vagina respectively as the one inside uterus to control bleeding from fibroid failed to control bleeding from vaginal secondary to DIC. All the 5 cases received optimal uterotonics in conjunction to Sengstaken tube, including oxytocin, misoprostol and hemabate. The amount of platelet transfused ranged between 6-12 units, and fresh frozen plasma 4-18 units. The case of submucosal fibroid had uterine artery embolization (UAE) after torrential acute bleeding was controlled by double Sengstaken tubes. The follow-up period ranged from 2 months to 23 months. All cases had their uterus conserved and normal menstruation returned for all. The case with submucosal fibroid had successful vaginal myomectomy 6 weeks postpartum.

CONCLUSION : In our experience, Sengstaken tube is useful for management of severe PPH due to various causes in a wide variety of settings. It's relatively cheap, versatile (used by surgeon for variceal bleeding as well) and its insertion requires only simple techniques. It's especially helpful at odd hours when only the on-call team is on-site and surgical expertise and alternative remedies (such as UAE) are not immediately and readily available.