ISAC-3-1  The screening test for gestational diabetes in singleton versus twin pregnancies

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[Objective] To compare the performance of the 50g glucose challenge test (GCT) and the 100g oral glucose tolerance test (OGTT) in singleton versus (vs.) twin pregnancies for consideration of the need to adjust cut-off value of GCT for twin pregnancy. [Methods] A retrospective study of women who underwent the GCT (at 24-28 weeks) and delivered in our institution from 2005 to 2013. We compared the result of GCT and OGTT between singleton and twin pregnancies and fetal outcomes in twin pregnancy according to the result of GCT. [Results] The results of the GCT were available for 3802, of whom 3435 singleton and 143 twin pregnancies. The mean of GCT result in twin group was higher than singleton group (123.5 ± 27.7 vs. 117.0 ± 38.1, p = 0.008). The rate of GCT >130mg/dl (52 (37.1%) vs. 874 (26.5%), p = 0.006) and GCT >140mg/dl (34 (24.3%) vs. 572 (17.4%)) in twin group were higher than singleton group as well. False positive rate for GCT >140mg/dl was significantly higher in twin group than singleton group (10 (17.9%) versus 402 (12.2%), p = 0.047). Twin pregnancy was independently associated with an increased risk for GCT result >130mg/dl (odds ratio (OR) = 1.542, 95% confidence interval (CI) = 1.056-2.262) even after adjustment for maternal age, parity, gestational age at birth, body mass index (BMI) of pre-pregnancy, weight gain during pregnancy, diabetic familial history. The receiver operating characteristic (ROC) curve analysis showed that the area under an ROC curve (AUC) for GCT in twin pregnancy was 0.958 (p<0.001) with 143mg/dl optimal cut-off point. [Conclusion] We found the GCT was associated with higher false positive rate in twin pregnancy compared with singleton pregnancies and twin pregnancy was independently associated with an increased risk for GCT result >130mg/dl. Therefore we should consider the adjustment of cut-off value for GCT in twin pregnancy.

ISAC-3-2  The factors associated with the failure of pelvic artery embolization for postpartum hemorrhage: Results from a single tertiary referral center

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[Objective] The aim of this study was to determine the factors associated with pelvic artery embolization (PAE) failure used for the management of postpartum hemorrhage (PPH). [Methods] From February 2005 to April 2014, a retrospective analysis of 288 patients undergoing PAE for PPH was performed. Clinical data, including maternal characteristics, delivery details, and transfusion requirements were obtained. We compared embolization success and failure group to investigate the factors associated with failure of embolization. Univariate analysis was performed to determine the factors related to clinical outcomes. [Results] The study groups were composed of 49 (17.7%) women with embolization failure group (FG) and 237 (82.3%) women with embolization success group (SG). The major cause of bleeding in the FG and SG was uterine atony (40.8%: 20/49 vs 54.9%: 130/237). The proportion of placenta previa was more frequent in the FG than the SG (30.6%: 15/49 vs 9.3%: 22/237, p-value = 0.013). Patient who was refered from other hospital tend to embolization failure for PPH. In preoperative laboratory results, the levels of Hb and Hct were significantly lower in the FG (8.9 ± 2.0 vs 9.5 ± 2.2, p-value = 0.003, 262 ± 6.1 vs 280 ± 6.3, p-value = 0.006). In the FG, the most common additional management was re-embolization (n = 27, 55.1%), followed by hysterectomy (n = 10, 20.4%), bladder ligation at operation room (n = 8, 16.3%), MTX injection (n = 4, 8.1%) and dilatation & curettage (n = 1, 2.0%). There was no statistically significant difference in the maternal age, parity and history of transfusion at the previous hospital between the FG and the SG. After PAE, mean length of hospital stay (6.1 ± 7.7 vs 8.4 ± 4.5, p-value = 0.047) the rate of admission to an intensive care unit (55.1%: 27/49 vs 73.3%: 176/237, p-value <0.001) were higher in the FG. [Conclusion] Our study suggested that vaginal delivery, patient who was refered from other hospital, placenta previa, lower levels of preoperative Hb and Hct were factors related with failure of pelvic artery embolization for postpartum hemorrhage.

ISAC-3-3  Therapeutic effect of CD133+ cells from human umbilical cord blood on neonatal hypoxic–ischemic encephalopathy model mice

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[Objective] Brain damage at birth can cause lifelong neurodevelopmental deficits. Stem cell therapies have been applied in several fields of medicine. We reported CD133+ cells, endothelial progenitor cells, from human umbilical cord blood induced nerve extension on our ex vivo hypoxic–ischemic encephalopathy (HIE) model. In this study, we have investigated the therapeutic effects of CD133+ cells for the treatments of neonatal HIE on in vivo model. [Methods] The Levine method was applied to 7-day old SCID mouse to make HIE model. CD133+ cells were administered by intraperitoneal injection to these mice 24h after hypoxic–ischemic injury. To evaluate motor function, the rotarod test was performed every 7 days between day 28 and 56 of postnatal. Immunohistochemical analysis was performed on day 9 (24h after peritoneal injection). 11, 13, 21 and 56 using human specific HLA–DR antigen to identify CD133+ cells in the brain. [Results] Motor function have been improved in CD133+ cells injected animals compared with animals without cells transplantation. CD133+ cells were detectable by immunohistochemical staining in the lesioned hemisphere from 24h after injection, and the peak of the number of cell was 48–96h after injection. [Conclusion] CD133+ cells transplanted intraperitoneally migrated toward brain in 48h after injection. The CD133+ cells have a therapeutic effect on neonatal HIE.