This Month's Headlines

Newborn
- Effect of early skin-to-skin contact following normal delivery on incidence of hypothermia in neonates more than 1800 g: randomized control trial
- Volume-targeted ventilation is more suitable than pressure-limited ventilation for preterm infants: a systematic review and meta-analysis

Birth Defects
- Premarital Screening of Beta Thalassemia Minor in north-east of Iran
- Periconceptional folic acid supplementation and the risk of preterm births in China: a large prospective cohort study

Publications

**Situation of Newborn and Child Health in South-East Asia**

Progress towards MDG 4

### Newborn

**Effect of early skin-to-skin contact following normal delivery on incidence of hypothermia in neonates more than 1800 g: randomized control trial.**


**Abstract**

**Objective:** To investigate the impact of early skin-to-skin contact (SSC) provided for first 24h on incidence of hypothermia in stable newborns weighing 1800g or more during first 48h of life.

**Study Design:** Stable newborns (term and late preterm: Mean gestational age 37.7 (1.35) weeks, range 34-40 weeks) having birth weight 1800g or more (Mean weight 2605.6 (419.8) grams) were enrolled after approval from Institutional Human Research Ethics Committee.
(CTRI/2013/06/003790) and randomized into early SSC (intervention group) and conventional care (control group). Initial care in the delivery room for few minutes immediately after birth in both the groups was given under radiant warmer. In the intervention group, newborns were provided SSC by their mother started between 30?min and 1?h after birth for first 24?h with minimal interruption and were provided conventional care other than SSC for next 24?h of life. In the control group, newborns were kept with their mother and received conventional care other than SSC for first 48?h. Temperature and heart rate of newborns were recorded at 30?min, 1, 2, 3, 4, 5, 6, 12, 24 and at 48?h of life in both the groups. Independent Samples t-Test and relative risk were used to analyze the data.

Result: Both groups had 50 neonates each with similar baseline characteristics. Heart rates were in normal range in both the groups. The intervention group provided an average (s.d.) of 16.98 (0.28) h of SSC over the first 24h period. The mean temperature was significantly high in the SSC group at all-time intervals starting from 1 to 48?h (P<0.05 for all). In the SSC group only two newborns (4%) had mild hypothermia (cold stress), and, of these two newborns, one had two episodes of hypothermia. All these three episodes of hypothermia occurred within first 3?h of life. In the control group 16 newborns (32%) developed hypothermia (temperature<36.5°C) during first 48?h of life. Of them, 11 newborns had single episode, 4 newborns had two episodes and one newborn had three episodes of hypothermia. Of these 22 hypothermic episodes, 20 occurred in the first 6?h of life and 2 episodes occurred at 48?h of life. Moderate hypothermia was seen in two newborns, whereas rest had mild hypothermia. The relative risk of developing hypothermia in the control group as compared with the SSC group was 8.00 (95% CI 1.94-32.99). There was no seasonal variation in incidence of hypothermia in both the groups.

Conclusion: Newborns in the SSC group achieved rapid thermal control as compared with the control group. Early SSC for 24?h after birth decreases incidence of hypothermia for initial 48?h of life. Early SSC needs to be aggressively promoted in term and late-preterm newborns to reduce incidence of hypothermia. Journal of Perinatology advance online publication, 20 February 2014; doi:10.1038/jp.2014.15.

Volume-targeted ventilation is more suitable than pressure-limited ventilation for preterm infants: a systematic review and meta-analysis


Abstract
Objective: To assess the effect of volume-targeted ventilation (VTV) compared with pressure-limited ventilation (PLV) in preterm infants.

Method: We searched the Cochrane Library (Issue 3, 2013), PubMed (1966 to 5 March 2013), China National Knowledge Infrastructure (CNKI) and periodical databases (1979 to 5 March 2013). We selected randomised controlled trials (RCTs) and quasi-RCTs of VTV versus PLV as active interventions in preterm infants. We performed meta-analyses using the Cochrane statistical package RevMan 5.0.

Results: Eighteen trials met our inclusion criteria. There was no evidence that VTV modes reduced the incidence of death (relative risk (RR) 0.73, 95% CI 0.51 to 1.05). The use of VTV modes resulted in a reduction in the incidence of bronchopulmonary dysplasia (BPD) (RR 0.61, 95% CI 0.46 to 0.82) and duration of mechanical ventilation (mean difference (MD) -2.0 days, 95% CI -3.14 to -0.86). VTV modes also resulted in reductions in intraventricular haemorrhage (IVH) (RR 0.65, 95% CI 0.42 to 0.99), grade 3/4 IVH (RR 0.55, 95% CI 0.39 to 0.79), periventricular leukomalacia (PVL) (RR 0.33, 95% CI 0.15 to 0.72), pneumothorax (RR 0.52, 95% CI 0.29 to 0.93), failure of primary mode of ventilation (RR 0.64, 95% CI 0.43 to 0.94), hypocarbia (RR 0.56, 95% CI 0.33 to 0.96), mean airway pressure (MD -0.54 cmH2O, 95% CI -1.05 to -0.02) and days of supplemental
oxygen administration (MD -1.68 days, 95% CI -2.47 to -0.88).

Conclusions: Preterm infants ventilated using VTV modes had reduced duration of mechanical ventilation, incidence of BPD, failure of primary mode of ventilation, hypocarbia, grade 3/4 IVH, pneumothorax and PVL compared with preterm infants ventilated using PLV modes. There was no evidence that infants ventilated with VTV modes had reduced death compared to infants ventilated using PLV modes.

Birth Defects

Premarital Screening of Beta Thalassemia Minor in north-east of Iran.

Hashemizadeh H, Noori R.

BACKGROUND
Beta thalassemia is a preventable disease. Iran has about 20,000 Patients who are homozygote for ß-thalassaemia and 3,750,000 carriers. The aim of this study was to determine the prevalence of beta thalassemia minor among men who underwent premarital screening in Quchana city in Khorasan Razavi region of Iran.

MATERIALS AND METHODS: This research is a descriptive cross-sectional study. From 2010 to 2011, all participants (1000) under marriage coming to health center of Quchan underwent routine mandatory tests. Participants were considered to have beta-thalassemia minor on the condition that they had a mean corpuscular volume (MCV) <80fl and a mean corpuscular hemoglobin (MCH) <27 pg and a hemoglobin A2 level >3.5%. Venous blood was taken into an EDTA tube and the complete blood count and red blood cell indices were measured with a Coulter automated cell counter. Electrophoresis was performed on cellulose acetate.

RESULTS: Mean and SD of hemoglobin, MCV and MCH were 16±2.9, 91±4 and 28.4±2, respectively. Hemoglobin A2 Higher than 3.5 percent was reported as 3.5%. The prevalence of beta-thalassemia minor with high hemoglobin A2 and microcytic hypochromic anemia was 3.5% (P-value).

CONCLUSION: In countries with high prevalence of hemoglobinopathies, a premarital screening program is helpful for identification and prevention of high-risk marriages. Detecting carrier couples with premarital screening program is an effective way of controlling thalassemia major.

Periconceptional folic acid supplementation and the risk of preterm births in China: a large prospective cohort study.

Li Z, Ye R, Zhang L, Li H, Liu J, Ren A.

Abstract
BACKGROUND
Folic acid-containing multivitamins have been associated with a reduced risk of preterm birth. We examined whether periconceptional use of folic acid alone reduced this risk.

METHODS: Data were derived from a large population-based cohort study conducted in China to evaluate the prevention of neural tube defects with folic acid supplementation. The sample comprised 207 936 singleton live births delivered at gestational ages of 20-42 weeks to women from two provinces in southern China. Healthcare workers recorded folic acid intake prospectively...
each month. Gestational age calculation was based on the first day of the last menstrual period. Preterm births were categorized into three clinical subtypes: iatrogenic preterm birth, preterm premature rupture of membranes (PPROM) and spontaneous preterm birth. Logistic regression was used to evaluate the association between folic acid use and the risk of preterm birth, adjusting for potential confounders.

**RESULTS:** The incidence of preterm birth was significantly lower among folic acid users (5.28%) than among non-users (6.10%). Folic acid use showed a 14% risk reduction for preterm birth overall [adjusted risk ratio (RR) = 0.86, 95% confidence interval (CI) 0.82-0.90]. This association was strongest for spontaneous preterm birth (adjusted RR = 0.81, 95% CI 0.78-0.86) and was not significant for iatrogenic preterm birth (adjusted RR = 0.97, 95% CI 0.88-1.07) or PPROM (adjusted RR = 1.07, 95% CI 0.93-1.23).

**CONCLUSION:** Daily intake of 400 µg folic acid alone during the periconceptional period was associated with a reduced risk of spontaneous preterm birth.