

### Study of cord blood insulin in relation to maternal blood glucose in 75 gram oral glucose tolerance test

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**Background:** The insulin level of fetus indicate the effects of maternal diabetes on fetus and it's health in future. There is not exact glucose threshold in maternal glucose tolerance test (GTT) for fetal hyperinsulinism and it's correlation with fetal morbidity and mortality. The aim of this study is to determine the correlation between insulin levels in cord blood with maternal blood glucose levels in 75 gram oral GTT.

**Methods:** This is a cohort study on 200 pregnant women in Tehran Javaheri hospital in 2009. The 75 gram OGTT was performed at 24-28 weeks of gestation and then 2 cc of cord blood for measuring insulin was gotten at delivery time. The data analysed by SPSS ver 13 and correlation, regression and independent t test. Results: 5.5% of neonates have hyperinsulinism. The correlation between maternal fasting blood sugar and cord blood insulin was significant. The correlation between infant birth weight and cord blood insulin and also maternal first hour glucose level in 75 gram OGTT was significant. Although the level of cord blood insulin was higher in mothers with impaired GTT but the correlation was not significant.

**Conclusion:** The concentration of insulin in fetus indicate the levels of glucose that transfer from mother to fetus intrauterine. In this study the most correlation between hyperinsulinemia with maternal fasting blood sugar was observed. It seems maternal FBS has the most sensitivity for detection of hyperinsulinemia in fetus

**Keywords:** insulin, gestational diabetes, 75 gr oral glucose tolerance test, macrosomia

### Surfactant replacement therapy at NICU in Amirkola children Hospital, Iran; Experience for a decade

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**Background:** This study was carried out to determine the profile, underlying diseases, complication and the out come of the neonates who received surfactant replacement therapy at NICU in Amirkola children hospital, a referral hospital in the north of Iran.

**Methods:** In this descriptive study we analyzed the age and the time of surfactant replacement, the rate of mortality, underlying diseases and some of the

complications such as: Pneumothorax, nosocomial infection, pulmonary hemorrhage and PDA in 133 neonates who received surfactant between 1999- 2007 at NICU in Amirkola children hospital. The type of surfactant which used since 1999 to 2006 was Survanta with the dose of 4 ml/kg. In 2007 because of difficult availability of Survanta some times Curosurf with the dose of 1.25 ml/kg was used. The indication for surfactant replacement therapy was respiratory failure and requirement to mechanical ventilation.

**Results:** The mean gestational age of neonates was  $32.39 \pm 3.8$  weeks and mean weight of them was  $1950 \pm 875$  grams. The mean age and time of receiving surfactant was 7.3 hours after birth. The mean length of ventilating was  $4.05 \pm 3.93$  days. The more prevalent underlying diseases were: RDS (83.56%), sepsis or pneumonia (8.45%), MAS (6.10%) and CDH (1.87%) The prevalence of complications were pneumothorax (42.48%), secondary sepsis (6.05%), PDA (3.67%) and pulmonary hemorrhage (3.42%). The mortality rate decreased from 48.87% for the first 8 years of the study to 24.88% for the last two years.

**Conclusion:** Survival rate of the surfactant treated neonates increased during the last two years of the study.

**Keywords:** neonate, surfactant, NICU, RDS

### Maternal serum zinc and copper and infant birth weight

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**Background:** Trace element deficiencies have been documented to play an important role in determination of the fetal outcome. It has been reported that the pregnant women in developing countries consume diets with a lower density of minerals and vitamins. Zinc and copper are essential trace elements and their deficiency can lead to a variety disorders. We evaluated whether is any association between infant birth weight and maternal serum zinc and copper levels.

**Methods:** This case-control study was carried out at the Obstetrics and Gynecology Department of the Alavi Hospital in Ardabil between August 2008- August 2009. Fifty six women who had delivered low- birth-weight infants (<2500gr) were taken as the case group, and from the mothers who had delivered normal birth weight ( $\geq 2500$ gr) infants 56 were selected at random as the control group. Venous blood sampl were obtained from the mothers. Serum zinc and copper levels were determined by the Atomic Absorption Spectrophotometer method.

**Results:** Mean of birth weight in infants, maternal age, body mass index in mothers and socioeconomic or demographic factors did not differ between cases and control groups. Maternal zinc concentration ( $\mu\text{g/dl}$ ) did not differ between Cases and Controls;  $55.84 \pm 14.40$

µg/dl vs.  $52.16 \pm 8.84$  µg/dl respectively. The mean serum copper level of case group was  $(231/75 \pm 38/12$  µg/dl) significantly higher ( $p < 0/05$ ) than control group ( $204/42 \pm 31/30$  µg/dl). There was a negative correlation between maternal serum copper level and birth weight.

**Conclusion:** Maternal zinc concentration has no effect on neonatal birth weight infants. There was a negative correlation between birth weight and maternal copper concentration. Maternal serum zinc and copper concentration declined as gestation progressed

**Key word:** birth weight; gestational age; copper; zinc

### Neonatal mortality in kuhdasht hospital, in 1388

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**Background:** Neonatal mortality is one of the most score in developed country. The most causes of neonatal mortality were prematurity, PROM, IUGR, Abnormalities and others. Goal of study were Evaluation of neonatal mortality in kuhdasht hospital, in 1388.

**Methods:** This is retrospective study in neonatal mortality in kuhdasht hospital, in 1388. Varieties were sex, neonatal weight, gestational age, congenital abnormality, causes of labor, causes of mortality, causes of, causes of CS, tools of study were file patients and then data performed and collected and analyzed with statistical methods.

**Results:** In 37 neonatal died in kuhdasht hospital, gestational age of neonates was between 22-40 weeks with 30 week average. Mean maternal age were 27.2 years. NVD were 46% and CS were 54%, Causes of death 45% were premature labor, 13% congenital abnormality, 22% other causes. 41% were girls and 59% were boys. Neonatal weight 1000-2500 gram was 60%, below 1000 gram 12% and upper 2500 were 28%.

**Conclusion:** Prematurity and congenital abnormality were the most predisposing factor for neonatal death in kuhdasht Hospital. then prenatal care, infectious disease prevention, routine prenatal examination were the most useful way to prevent neonatal death.

**Keywords:** Kuhdasht, Neonatal death, NMR

### A survey on laboratory tests in neonatal sepsis and their application in treatment hospitalized patients in the neonatal ward, Ekbatan Hospital, Hamedan, 2004-2005

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**Background:** Neonatal sepsis is referred to as any type of bacterial infection with positive blood culture during the first month of life. It is one of the main causes of admission at neonatal wards and neonatal intensive care unit (NICU) and it still remains as one of the main reasons of mortality and morbidity, despite advent of new effective antiseptic. The aim of this study is to evaluate laboratory tests in neonatal sepsis and their application in the treatment of hospitalized patients in neonatal ward and NICU.

**Methods:** This descriptive cross-sectional study comprised 88 neonates admitted at neonatal ward or NICU, Ekbatan Hospital with neonatal sepsis from 2004 to 2005. Basic workup included CBC diff, Plt, ESR, CRP, blood culture (BC), urine analysis, urine culture and lumbar puncture. The results of mentioned laboratory tests entered the questionnaires. Gestational age, neonatal age, sex, birth weight, and treatment duration were extracted from the medical records. Data were statistically analyzed by SPSS 13.

**Results:** 56.8% out of 88 neonates were boys and 43.2% were girls. 18% neonates were preterm and 82% were term. Early onset sepsis was found in 39.8% and late onset sepsis was found in 60.2%. Blood, CSF (cerebro spinal fluid), and urine culture were positive in 9 (10.2%), 2 (2.3%), and 8 (9.1%) patients respectively. The most common first manifestation was poor feeding which was seen in 41% neonates. From 9 patients with positive blood culture, 11.1% had leukocytosis. Leucopenia, neutrophilia, neutropenia, thrombocytosis and thrombocytopenia were found in 33.3%, 11.1%, 22.2%, and 44.5% respectively. CRP was positive in 77.8% patients. ESR was not increased in any cases of positive blood cultures. The mortality rate was 10.2% generally.

**Conclusion:** Neonatal sepsis is a disease with a wide spectrum of non specific symptoms and signs, which is confirmed by positive BC. The results of this study showed that there is no specific sensitive (100%) laboratory test for the diagnosis of neonatal sepsis and only positive CRP, abnormal PLT and WBC counts may be helpful in the diagnosis of definitive neonatal sepsis cases.

**Keywords:** Neonatal sepsis, laboratory tests, neonatal ward

### Inanition Fever in Neonates Referred to Tabriz Children's Hospital

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**Background:** Fever due to dehydration in the first days of life is called "inanition fever" and is associated with electrolyte disturbances including: hypernatremia and indirect hyperbilirubinemia that may result in serious