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OPTIMAL OXYGENATION OF THE NEWBORN

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Oxygen therapy for newborn infants was introduced in the United States in the 1930s to improve respiratory pattern and to reduce a purported risk of brain damage caused by unrecognized oxygen lack. Post World War 2 incubators were built to maintain high oxygen concentration. Not before the discovery of its relation to retrolental fibroplasia (retinopathy of prematurity, ROP) were questions raised concerning the use of oxygen. In the 1970s the transcutaneous oxygen electrode and in the 1980s pulse oximeters were introduced in neonatal intensive care units and many believed the problems related to oxygen toxicity in the newborn nursery could be eliminated or at least reduced. Although it has been acknowledged for 5 decades that oxygen might be harmful to premature infants it is still possible that toxic reactions of oxygen are underestimated. In my opinion it is clear that we have a number of unanswered questions. A simple one is to define the normal oxygen saturation in the earliest newborn period. It has for instance been shown that in very low birth weight infants with gestational age < 30 weeks and weighing < 1000 gram in order to keep SaO2 between 50 and 90% the PaO2 should be kept between 2.5 to 5.5 kPa (18-41 mm Hg). A reasonable paO2 to aim at therefore seems to be around 5.5 kpa, which probably is lower than in most centers.

A recent study from UK by Tin et al indicates that the optimal arterial oxygen saturation of extremely premature infants the first weeks of life perhaps is not known. The normal saturations in term and preterm infants in the first week of life which previously has been identified between 93-100% but this is probably not applicable to the extremely low birth weight infants. The optimal arterial oxygen saturation of growing extremely premature infants is also not known. Existing recommendations are probably valid for the more mature premature infants only. Therefore new recommendations are needed for the most extreme premature infants for instance with gestational ages between 23 and 27 weeks. These infants should perhaps be nursed with lower oxygen saturations than used by most nurseries today, at least the first few days of life. Data accumulate indicating that even a hyperoxic exposure during a few minutes after birth may increase the oxidative stress for weeks. Because oxidative stress influences apoptosis and cell growth, this may have long-term consequences on growth and development, and further studies should clarify whether such therapy is carcinogenic as well.

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ANTEPARTUM FETAL SURVEILLANCE IN HIGH-RISK PREGNANCIES USING HOME FETAL HEART RATE MONITORING DEVICE

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To evaluate the quality, reliability, safety and cost effectiveness of home cardio-tocographic monitoring in women with high-risk pregnancies.

METHODS AND PATIENTS:

The CG-900P (home cardiotocograph) is designed for monitoring fetal heart rate (FHR), uterine activity (TOCO) and for event marking of fetal movement. 25 pregnant women considered to be at high risk due to diabetes, hypertension, growth retardation, oligo-hydramnion and premature contractions performed daily home cardiotocograph monitoring and transmitted the data for analysis to the Rabin Medical Center Perinatal Service via a built-in modem.

RESULTS:

265 traces were performed and successfully transmitted to the Rabin Medical Center. In 33 cases (13%) additional monitoring was required due to: non- reassuring traces (n=29), technical reasons (n=2), maternal request or premature contractions (n=2). In 26 cases of non reassuring FHR monitoring, 23 repe-

ated traces were reassuring and in 3 cases inter-vention was needed: 2 women were referred to the antenatal clinic and were discharged after further evaluation (biophysical profile). 1 woman underwent urgent caesarean section due to placental abruption. All patients indicated the simplicity of use and the high level of comfort they felt.
CONCLUSIONS:
Self-nonstress home testing of pregnant women at high risk seems to be a reliable and accurate method of antepartum fetal heart rate testing which can be performed comfortably in the home setting and may prevent unnecessary hospital visits and by that may possible reduce the expense of in- or outpatient care. A further large-scale study is required to evaluate the cost effectiveness of this management.

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HOME CARE IN PERINATAL NURSING PRACTICE
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Maternal and child health nurses practice at all levels of care and in a variety of settings from home, schools and outpatient clinics to the most sophisticated intensive care unites.
Perinatal Nursing, focuses on the care of childbearing women and their families during pregnancy, childbirth and the first 4 weeks after birth. There have been significant changes in the practice of perinatal nursing over the past 25 years. Many of the changes have been positive for childbearing women, but there have been some negative trends in the care of women during labor and birth
İmproving the home care services in perinatal nursing is one of the positive changes. Home care services in perinatal nursing provider services to obstetrical patients and their newborns in their home.
Home visits are designed to assist with physical restoration, psyhosocial adaptation and assisting the new mother and her family in adjusting to their new roles and responsibilites.
As the number of mothers, infants and children cared for in the home increased the number of agencies olso increased to meet this need.
Thus, nursing care in the home is coming full circle.

L139 *(Precongress Course)*

FIRST TRIMESTER PREGNANCY RISK ASSESSMENT OF CHOROMOSOMAL ABNORMALITIES
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It has become appearent from the results of several preliminary studies that screening for choromosomal abnormalities in the first trimester is possible but that the parameters used must be different from those in the second trimester.
The most promosing parameters in the first trimester appear to be pregnancy associated plasma protein A (PAPP-A) and free β-hCG as serum biochemical agents. Using PAPP–A alone, 60 % of Down syndrome cases would be identified, for a false positive rate of 5 %. Using free β-hCG, instead of total hCG, in serum improves, 8 %-10 %, the detection rate of choromosomal abnormalities.
As a companion to the use of maternal serum analytes for predicting risk for choromosomal abnormalities, there are a characteristic set of ultrasound detectable anomalies that have been periodically found, which should heighten the suspicion when they are seen for the major aneuploidy conditions such as trisomies 21,18 and 13. Enlarged nuchal membrane (or translucency) in the early first trimester weeks and may be important for the aneuploidy conditions.
Cerebral ventriculomegaly, holoprosencephaly, choroid plexus cysts, cranial posterior fossa cysts, nuchal cystic hygroma, nuchal edema, heart defects, hyperecogenic bowel, small for gestational ages are the ultrasnographic findings in the late first trimester weeks. Although the odds of an aneuploid condition may be very high, none of the findings on ultrasound are alone pathognomonic of any particular aneuploid condition.