

INFLUENCE OF PREGNANCY EXTRINSEC FACTORS ON INTRAUTERINE GROWTH RETARDATION AND ANEMIA IN NEONATES IN TIMIS COUNTY - ROMANIA

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Abstract

Introduction. The aim of this study was to correlate the mother's biological status and related extrinsic factors during pregnancy and growth retardation and anemia in neonates. **Material and method.** We have done a prospective study on 75 mothers who delivered in 2013 in Obstetrics and Gynecology Clinics of Emergency County Hospital Timisoara and their newborns. Maternal extrinsic factors pre- or during pregnancy were related with the percentage distribution of neonates with IUGR and anemia. **Results.** Smoking habits (53%), lack of education (44%) and precarious socioeconomic conditions (42.7%) were the first three extrinsic factors well represented. The percentage distribution of newborns was 43% AGA, 32% with IUGR and 25% with IUGR and anemia. The overall percentage of newborns with IUGR is 57%. **Conclusions.** Extrinsic factors present pre- and during pregnancy influence the increase of neonates with IUGR in itself or IUGR and anemia.

Key words: IUGR, anemia, maternal extrinsic factors.

Introduction

Preconception health can potentially improve women's health and pregnancy outcomes (1). Fetal growth and development is a complex process that depends on the biological status of the mother as well as on many factors including socio-economic conditions, education, risky behaviors, nutrition, ethnic customs, emotional and pathologic burdens and others.

Intrauterine growth retardation (IUGR) describing a fetus that has not reached its genetic growth potential (2) remains one of the main challenges in maternity care (3). Usually IUGR is accompanied not only with stillbirth, neonatal death, and perinatal morbidity but also with delayed effects like cerebral palsy and diseases in the adult life (4, 5, 6). Many factors related to the mother could have a detrimental impact on fetal growth. For instance, maternal smoking and gestational hypertension are important risk factors for the development of IUGR (2).

The aim of this study was to assess the influence of maternal related extrinsic factors on growth retardation and anemia in infants.

Materials and methods

In 2013 we have studied prospectively the medical records of 75 mothers and their newborns from the Clinics of Obstetrics and Gynecology of Emergency County Hospital Timisoara. We have evaluated the percentage distribution of extrinsic factors available from maternal data: age, ethnicity, socio-economic status, education level, toxic working place environment, nutrition (intake of supplements during pregnancy), obstetrical history, alcohol and tobacco consumption. After registering the infants with IUGR and anemia we have compared the distribution of neonates with appropriate gestational age (AGA), IUGR and IUGR+anemia.

Results

In 2013, 75 mothers who delivered in the Clinics of Obstetrics and Gynecology from Emergency County Hospital Timisoara and their newborns were studied prospectively. The mean age of the mothers was 30.2 years. In table no 1. we have analyzed the maternal extrinsic factors present pre- and during pregnancy. 33.3% of mothers are belonging to an ethnic group that is actually quite consistent in our country and for whom medical surveillance is not necessary, due to religious and other beliefs. 42.7% of mothers are living in precarious conditions with low and some with no monthly income. Another characteristic was lack of education for 44%. Unfavorable working place was encountering in 7% of mothers. Only 7% of mothers have used nutrition supplements (under medical prescription) during pregnancy.

Out of 75 mothers, less than half (44%) had at least one medical check during pregnancy and 15 out of them were aware of having anemia pre- and during pregnancy. More than half of the mothers (53%) have been smoked during pregnancy. None of them admitted alcohol consumption during pregnancy.

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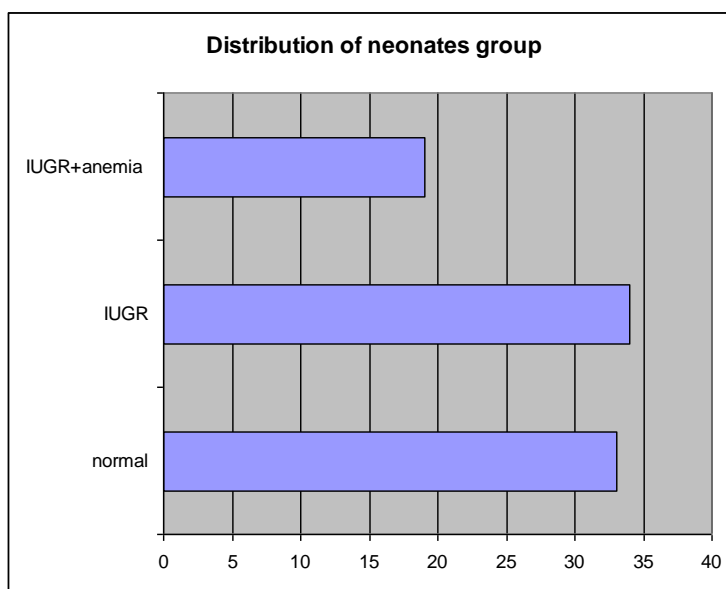
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Table 1. Maternal extrinsec factors pre- and during pregnancy.

Ethnic group	Precarious socioeconomic status	No Education	Toxic work place	Nutrition supplements	Obstetrical history	Smoking habits
33.3%	42.7%	44%	7%	7%	20%	53%



Graphic 1. Distribution of neonates with AGA, IUGR and IUGR+anemia.

Discussions

Fetal growth and development depends on maternal preconception and during pregnancy health. For instance, anemia may affect up to 56% of pregnant women in developing countries (7). In our study 20% of mothers were aware of being affected by anemia before and during pregnancy. All of them were diagnosed in the first trimester and no correction was succeeded in the next two trimesters. Iron deficiency during pregnancy can have severe consequences, not only for the mother, but also for her infant. Maternal iron deficiency has been implicated as a risk factor for preterm delivery, small-for-gestational-age and neonatal mortality (8).

Maternal smoking is an important risk factor for the development of IUGR (2, 9). In our study smoking habit was recorded in more than half (53%) of mothers. Another characteristic was that 42.7% of mothers were living in precarious conditions with low or some with no monthly income. Lack of education has been encountered in 44% of mothers.

Growth failure is often not detected antenatally, and in routine clinical practice, as many as three-quarters of babies at risk of IUGR are not recognized as such before delivery (10). Different aethiologic factors are recognized as

conditions for onset of IUGR, i.e., placental insufficiency, congenital anomalies, infections, or drug and substance misuse (3). Mortality and morbidity are increased in IUGR infants compared with infants who are appropriate for gestational age (11, 12). Considering our study, we observed a percentage distribution of newborns: 43% appropriate gestational age (AGA), 32% with IUGR and 25% with IUGR and anemia.

Maternal behaviors and chronic conditions such as tobacco use, inadequate folic acid intake, are prone to IUGR and anemia in neonates (1). Improving educational opportunities, health-related behavior and access to health care (13) could reduce the risks and not ultimately different inequalities in health in the EU countries for instance (13).

Conclusions

Analyzing the data from this study we consider that many maternal extrinsec factors are detrimental on normal fetal growth and anemia in neonates.

Women's prepregnancy and interpregnancy health status, pregnancy and infant outcomes should be under constant care of medical services and thus access to health-care could be improved.

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