DEPARTAMENTO DE GINECOLOGIA E OBSTETRÍCIA
FACULDADE DE MEDICINA DE RIBEIRÃO PRETO
UNIVERSIDADE DE SÃO PAULO

USP - RIBEIRÃO
assistência - ensino - pesquisa

Congenital anomalies and their impact on maternal and perinatal outcomes

Oliveira Junior RE, Almeida LFG, Duarte G, Berezowski AT, Okido MM, Marcolin AC.

Background

- Congenital anomalies (CA) are important causes of childhood death, chronic illness and disability in many countries.
- The study of CA serves to facilitate the identification of teratogenic exposures, to assess the impact of primary prevention and prenatal screening policy at a population level, and to evaluate the impact of CA on perinatal outcomes.

Objectives

- To identify epidemiological risk factors for CA and evaluate the impact of them on the perinatal outcomes.

Metodologia

- This prospective cohort study comprised 275 women whose fetuses had CA. All of them were admitted to the University Hospital of the Ribeirão Preto Medical School, State of São Paulo, Brazil.
- CA were divided into seven groups: (1) central nervous system (CNS), (2) urinary tract (UT), (3) heart/great vessels (HGV), (4) gastrointestinal tract/abdominal wall (GI), (5) musculoskeletal (ME), (6) isolated fetal hydrops and (7) others (multiple, diaphragmatic hernia, and tumors).
- Maternal variables to establish potential risk factors for each group of CA and perinatal outcomes were evaluated.
- The correlation between the findings of the ultrasound scans level I and level III was assessed.
- Multilevel regression analysis was used to determine the effects of maternal characteristics on the incidence of CA, and the impact of CA on perinatal outcomes.

Resultados

- The general prevalence of CA was 2.4%.
- Non-white skin color was associated with reduced risk of CNS CA (OR:0.43, 95%CI 0.19–0.97).
- Smoking increased the risk of ME CA (OR:3.28, 95% CI 1.08–9.90).
- Multiparity was associated with increased risk of HGV CA (OR:0.26, 95% CI 0.08–0.80; vs. primigravida; OR: 0.32; 95% CI 0.11–0.95; vs. parity of two).
- Abortion in previous pregnancy increased by 8 times the risk of fetal hydrops.
- Higher educational level was associated with reduced risk of UT CA (OR: 0.52, 95% CI 0.29–0.94).
- Maternal age greater than 19 years and folic acid supplementation during pregnancy reduced the risk of GI CA (OR: 0.42, 95% CI 0.19–0.95 and OR: 0.34, 95% CI 0.13–0.91, respectively).
- The greater agreement between the findings of the ultrasound scans level I and level III was observed for GI CA (84.2%) and the lowest correlation occurred when the diagnosis was HGV CA (28.1%).
- There were no significant differences among the CA groups related to fetal growth restriction, fetal distress, 1-minute Apgar score <7, and need for assisted ventilation.
- Polyhydramnios was more frequent in ME CA and hydrops while oligohydramnios was more frequent in UT CA. The stillbirth rate was higher in the hydrops group. Prematurity was significantly more frequent in GI CA and hydrops. Cesarean section rates were very high (39-84%).
- Low birth weight was more frequent in GI, ME and OT CA. 5-minute Apgar score < 7 was more prevalent in UT, ME CA and hydrops. The infections rates were lower in CNS, UT and OT CA. The need for surgical treatment was significantly lower in UT, ME and OT CA, but much higher in GI and HGV CA. Neonatal death was less frequent in CNS CA.

Conclusions

- It was possible to identify some risk factors for CA. The general sonographer fails to distinguish some types of CA compared to the Fetal Medicine specialist, especially for HGV CA. Adverse perinatal outcomes reached alarming rates in fetuses with CA and may differ according to its type.