A 10-year Review of Congenital Central Nervous System Malformations and Associated Anomalies in a University Hospital

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ABSTRACT

Objectives: To identify and evaluate the congenital central nervous system (CNS) malformations and its associated anomalies. To identify any existing risk factors. **Methods:** All confirmed cases of congenital cranial nerve system (CNS) anomalies from 2006-2015 from the database of the Ultrasound Unit in University Malaya Medical Centre were analysed. The medical records were obtained from the Medical Records Department. The demographic and pregnancy data were collected including antenatal and delivery data, age, race, history of smoking and co-morbid factors such as diabetes and pregnancy-induced hypertension (PIH). All the collected data were analyzed using SPSS version 21 and the study is using Pearson Chi-Square test (p-value). In all cases, p value < 0.05 was considered statistically significant. **Results:** There were 298 (27%) confirmed cases of CNS anomalies from 2006-2015 out of 1099 all congenital malformations. Statistical analysis shows the mean maternal group age is 30.84 with highest age of 45 and lowest age of 19. The population race in this study consist of 222 Malay (74.5%), 37 Chinese (12.4%), 28 Indian (9.4%) and 11 others (3.7%). There were 220 cases with single congenital CNS anomaly (73.8%) and 77 cases with multiple congenital CNS anomaly (25.8%). The types of diagnosis of the congenital CNS anomaly include 110 ventriculomegaly (28.1%), 45 anencephaly (11.5%), 9 fetal acrania (2.3%), 15 microcephaly (3.8%), 37 holoprosencephaly (9.4%), 36 cisterna magna anomalies (9.2%), 29 spina bifida (7.4%), 20 encephalocoele (5.1%), 17 agenesis of corpus callosum (4.3%), 21 Dandy-Walker variant (5.4%), 6 posterior fossa cyst (1.5%), 15 choroid plexus cyst (3.8%), 2 arachnoid cyst (0.5%), 2 hydrocephalus (0.5%), 8 hypoplastic cerebellum (2.0%), and 17 others CNS anomaly (4.3%). **Conclusions:** Congenital cranial nervous system anomalies are one of the commonest congenital malformations and ultrasound is a useful tool for diagnosis.

A 10-year Review of Prenatal Diagnosis of Congenital Cardiac Anomalies in a University Hospital

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ABSTRACT

Aim: To identify the prevalence of congenital cardiac anomalies in pregnant women. To identify maternal risk factors associated with congenital cardiac anomalies. **Method:** All confirmed cases of congenital cardiac anomalies from 2006-2015 from the database of the Ultrasound Unit in University Malaya Medical Centre were analysed. The medical records were obtained from the Medical Records Department. The demographic and pregnancy data were collected including antenatal and delivery data, age, race, history of smoking and co-morbid factors such as diabetes, pregnancy-induced hypertension (PIH), epilepsy, SLE and other connective tissue diseases. During this period there were 1,099 total congenital anomalies of which 306 were congenital cardiac anomalies. The collected data were analyzed by using SPSS version 21. Pearson Chi-Square test was used during the analysis and p value < 0.05 is considered statistically significant. **Result:** The age of the mothers ranged from less than 19 years old (0.3%), 20-29 years old (43.7%), 30-39 years old (45.7%) and more than 40 years old (10.3%). The mean maternal age is 31 years old. The ethnic groups were Malay (68.42%), Chinese (21.05%), Indian (6.908%) and others (3.618%). 181 (59.2%) mothers did not have any history of abortion, 82 (26.7%) mothers have history of abortion. The highest number of abortion is 5 and the lowest number is 1. 86.9% of the mothers do not smoke, 127 (41.5%) mothers do not have any co-morbidities and 75 (24.5%) had co-morbidities. Among the co-morbidities 27 had gestational diabetes mellitus (12.2%), 10 bronchial asthma (4.5%), 9 pregnancy induced hypertension (4.1%), 6 pre-eclampsia (2.7%), 4 hypothyroidism (1.8%), 4 hypertension (1.8%), 3 connective tissue disease (1.4%), 2 diabetes mellitus (0.9%), 2 depression disorder (0.9%) and 28 other diseases (12.6%). The outcome of the study shows that 256 fetus (83.7%) has one anomaly, 47 fetus (15.4%) has multiple anomalies and 3 (1%) is missing data. Birth outcome of the fetus include 27 intrauterine death (8.8%), 107 live birth (35%), 25 perinatal death (8.2%) and 147 (48%) delivered elsewhere. There were significant relationships between history of smoking and co-morbidities with the prevalence of congenital cardiac anomalies. **Conclusions:** Congenital cardiac anomalies are fairly common and have a relationship with maternal co-morbidities.