A survey study of the Congenital Abnormalities in Hawler city

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Abstract

To study and know the type and Frequency of congenital abnormality, the prospective study is started for fetus which born in birth hospital in Hawler city, also we study the sex of baby, mother age, location and mother and babies blood group the following results were concluded: In case of type of congenital abnormalities the highest percentage in case of hydrocephalus it's about 22%, and in case of gender it's clear that most congenital abnormalities in female about 52% and male about 46%, while in the case of age the highest congenital abnormality born is between 25 to 35 years. And in the case of baby blood group the most congenital abnormality in O- which is the highest percentage about 32%.

Keywords: component; congenital abnormalities, Hawlerl, Iraq

Introduction

Congenital anomaly is a condition that results from an abnormality of structure, function or metabolism in one or more parts of the body and has the potential to seriously affect health, development or function [1, 2]. Although congenital anomalies, by definition, are present at birth, they may not be diagnosed until later in life. Major congenital anomalies are generally reported to affect an estimated three percent of all births. However, prevalence estimates of congenital anomalies vary depending on which anomalies are included and the method of ascertain ment [3].

The study of congenital malformations is known as teratology, abnormalities evident at birth can arise due to failure of development (for example, absent limb(s), microcephaly) ; failure of parts to unite (cleft lip and palate, spina bifida) ; failure to divide (syndactylty — joined fingers or toes; conjoined twins) ; failure to canalize (atresia: no passage through some part of the gut) ; failure of tissues to migrate to the proper site (malrotation of bowel, Hirschsprung disease) ; failure to atrophy — to disappear appropriately in the course of development (branchial clefts, thyroglossal

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congenital abnormalities are caused by problems in the development of the infant before birth and are the structural formation errors, or disturbed chemical function due to a metabolic deficiency it is estimated that 1:15 children born today has an in born defected. Tissue common locations for congenital abnormalities today, are abnormality in hand and hydrocephalus [4].

Genetic causes of congenital anomalies include Mendelian-inherited and chromosomal disorders. In Mendelian-inherited conditions, the child inherits a genetic disease or an at-risk gene from one or both parents, or is affected as a result of a new mutation. Chromosome abnormalities, the most common being Down syndrome (DS) or trisomy 21, come about as a result of a change in the number or structure of chromosomes, giving rise to the associated physical and mental problems[5]. In case of environmental causes these include drugs, chemical, toxins and many other agents in our environment only few agents have been unambiguously identified as teratogenic many are suspected[6,7].

Maternal age is a risk factor for congenital anomalies, specifically chromosome problems. Maternal health conditions that contribute to increased risks for congenital anomalies include obesity, epilepsy controlled with anticonvulsant medications, and insulin-dependent diabetes. More recent but somewhat contradictory research has implicated maternal thyroid disease, even when treated, as increasing the risk for congenital anomaly-affected pregnancies [8]. Approximately 66% of major malformations have no recognized etiology and most of them have multifactorial inheritance. These defects can occur for many reasons including inherited genetic conditions, poor diet, toxic exposure of the fetus for example to alcohol birth injury and, in many other cases, for unknown reasons[9,10].

In spite of the frequency of congenital anomalies, the underlying causes for most remain obscure. It has been estimated that around 15%-25% are due to recognized genetic conditions (chromosome and single gene causes), 8%-12% are due to environmental factors (maternal-related conditions, drug or chemical exposures) and 20%-25% are due to multifactorial inheritance, the majority, 40%-60% of congenital anomalies, have unexplained causes [10]

Materials and Methods

Although this study was a hospital-based survey, the majority of deliveries in Hawler take place in this hospital and the data can be taken as a good reflection of the congenital malformations in the area. The prevalence of different congenital
malformations in neonates varies from one country to another, which might be due to racial and environmental factors or differences in survey methods a form was prepared

**Results and Discussion**

With improved control of infections and nutritional deficiency diseases congenital Malformations have become important causes of prenatal mortality in developed countries and would very soon be increasingly important determinants of prenatal mortality in developing countries like India [11, 12].

Figure (1) illustrates the type of congenital abnormality and its percentage it's clear that the highest percentage of congenital abnormality are hydrocephalus about (22%). Studies have shown that there are a number of congenital abnormalities of severe disability affected the central nervous system (brain and spinal cord) on fetus formation during the first four week after fertilization, it happens before the mother knows she is pregnant.

![Fig (1): Show the frequency of abnormality types.](image)

About 2-3% of babies are born with congenital defect, the incidence is highest in the hand (10/1000 live births), heart (8/1000), kidneys (4/1000), and limbs (2/1000). All other defects have a combined incidence of (6/1000) live birth [13]. Hydrocephalus is not rare as the people supposed that there is only one fetus born with congenital abnormality in hand in each 100 newborn. These abnormalities caused by the deficiency of some vitamins and minerals like pregnancy can reduce the risk of bifida and other neural tube defects (NTDS) in infants, this reduced risk has been on women with previously NTD affected pregnancy, who are considered at having subsequent affected pregnancy, as well as on other women recommendation from the health service, offers this advice all
women who can became pregnant should take multivitamin containing (400 micrograms of folic acid daily in addition to eating food containing foliate, women with previous NTD affected pregnancy are advised to take doses of folic acid 4gm/day before pregnancy.[13]

Figure (2) illustrates that there is a relationship between gender and congenital abnormality but there is no significant difference between male and female in our study we can show that the affected female is more than male(female 52% and male 47%), it may be due to the structure of chromosomes your babies chromosomes were tested and found to be abnormal. Perhaps you were told about there was a translocation, deletion, or ring chromosome you will had your own chromosome tested, if your chromosome are normal, you might be told that you will have no future problems [14]

![Fig (2): The % of abnormality in male and female](image)

There are many reasons for why birth defects happen, most occur due to environmental and genetic factors. in case of environmental causes include drugs,chemical,toxins and many other agents in our environment, in our study show that the ratio of congenital abnormality indoor(inside the city center)is larger than in outdoor(out city center) it may be due to the rate of pollution bad weather in city center is larger as composed without city.

About 40 percent of all birth defect have known causes; the remaining 60 percent of birth defect are physical or mental abnormality present at the time when child is born. The defects that resulted from increasing the number of chromosome it is strongly related with mother age.

Figure (3) show the relation between the mother ages fetus congenital abnormality, it has been clarified that the highest mother age was between (25-35)years that give birth to fetus of congenital abnormality, so it became obvious that the mother age has adverse effect on fetal deterioration and mental abnormalities the percentage of congenital
deterioration in embryo reach about 3% in some place, some of which are resulted from hereditary and other from the environmental effects like exposure to chemical and searing on the fertilized ovules leads to clarify the environmental reasons for different congenital abnormalities and consequently we can advise those women who wish to be pregnant to be far away from such bad environments.

The hereditary factors were coincided to be most important reasons (agents) for occurrence of congenital deterioration result from disorder in number or structure of days chromosomes which lead to cause damage in process of embryo formation and leading to modification form its normal pathway and forming deterioration and the environmental agents play diverse role in formation of abnormalities, in that scientists have be showed that most of the chemical drugs, hormons and viruses that we are affected by or taken by mother, can be transferred through placenta and reaches the fetus and its considered to be with the red line in study the shortage of the food and the bad quality and shortage of food breeding to the baby and the mother during the pregnant to continues the live of fetus and growth process all these factors cause abnormality of the baby[15].

Figure (4) illustrate that the highest abnormality are found in blood group O- Whatever genetic or environmental factors may be involved in the a etiology of these malformations, there does not appear to be any appreciable association between the Rh factor or ABO blood grouping and these malformations of the central nervous system, although Penrose in his study commenting on the Dublin and Rhode Island percentages of group O mothers of anencephalic, suggests that ABO incompatibility remains a possibility in its causation.[14]
Fig (4): Show the percentage of baby blood groups.

References


