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"A study to estimate the prevalence of the congenital anomalies among the foetuses collected for thesis purposes in the Department of Anatomy, JNIMS, MANIPUR"

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Background: *Congenital anomaly is due to structural and functional abnormalities that occur during intrauterine life. High prevalence of this condition is one of the major causes for mortality and morbidity in countries.*

Objective: *The objective of present study is to estimate the prevalence of morphologically detectable congenital malformations in still births delivered at JNIMS.*

Materials and Methods*: This retrospective observational study was conducted in the Department of Anatomy, JNIMS on the still birth foetuses collected from Obstetrics and GynaecologyDepartment, JNIMS for thesis purposes over a period of 5and half years from 2017-2022 in a total of120 formalin-fixed still birth foetuseswhich were collected for thesis purposes.Foetuses with congenital anomalies were selected and their morphological features were analysed and percentage of the particular congenital anomaly out of the total collected was calculated and recorded.*

Results*: Out of 120foetuses studied, 21 (17.5%) werefound to have morphologically detectable congenital anomalies.Among the anomalies 7 wereanencephaly (33.33%), 5 were spina bifida (23.81%), 3 were achondroplasia (14.29%), 2 werecleft lip (9.52%), 2 weresingle nostrils (9.52%)and 2were omphalocele (9.52%).*

Conclusion*: The present study hasdetected high percentage (17.5%) of congenital anomalies which creates a necessity to broaden the study population covering most of the district's hospitals and primary health centres in Manipur.*

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I. INTRODUCTION:

Birth defects are also known as congenital abnormalities, congenital disordersor congenital malformations. They can be defined as structural or functional anomalies (for example, metabolic disorders) that occur during intrauterine life and can be identified prenatally, at birth, or sometimes may only be detected later in infancy, such as hearing defects. Broadly, congenital refers to the existence at or before birth.[1]Earlier in the 20th century, the proportion of perinatal deaths due to anomalies was not as high, as there were commoner causes like infections or metabolic problems. As the incidence of the latter reduced due to improved health care, there has been an increase in the percentage of perinatal deaths due to congenital anomalies.[2]There has also been an increase in the use of irradiation, alkylating agents, antimetabolites, smoking and drinking and environmental pesticides—all known to cause congenital anomalies.[3]Major structural anomalies occur in approximately 3% of liveborn infants and birth defects are a leading cause of infant mortality, accounting for approximately 25% of infant deaths. They are the fifth leading cause of years of potential life lost prior to age 65 and a major contributor to disabilities. They are also non-discriminatory; the frequencies of birth defects are the same for Asians, African, Americans, Latin Americans, Whites, and NativeAmericans.[4]In India the incidence is around 2.5 %[5] and accounts for 8-15 % of perinatal deaths and 13-16 % of neonatal deaths in India.[6,7]

The present studyis conducted to estimate the prevalence of morphologically detectable congenital anomalies among the stillbirths and aborted foetuses.

II. MATERIALS AND METHODS:

The present study is a retrospective observational study which was conducted in the Department of Anatomy, JNIMS on the still birth foetuses which were collected from Obstetrics and Gynaecology Department, JNIMS for thesis purposes over a period of 5 and half years from 2017-2022. The duration of the present study starts from 2020 august till date. A total of 120 formalin-fixed still birth foetuses were collected for thesis purposes during these periods. Of these, foetuses with congenital anomalies were selected and their morphological features were analysed. After recognition of the anomaly, their numbers were recorded and photographed. Percentage of the particular congenital anomaly out of the total collected was calculated and recorded.

III. RESULTS:

Out of 120 foetuses studied, 21 (17.5%) were found to have congenital anomalies. Among the anomalies 7 were anencephaly (33.33%) (CNS), 5 were spina bifida (23.81%) (CNS), 3 were achondroplasia (14.29%) (Musculoskeletal), 2 were cleft lip (9.52%) (GIT), 2 were single nostril (9.52%), 2 were omphalocele (9.52%) (GIT). The commonest anomalies were that of central nervous system followed by GIT than musculoskeletal deformities.

Fig.1: Anencephaly

Fig.2: Spina bifida

Fig.3: Achondroplasia

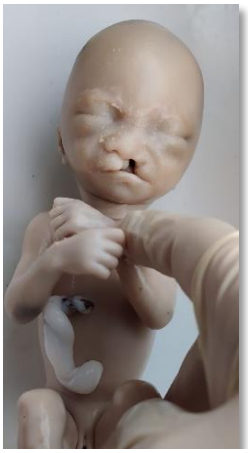
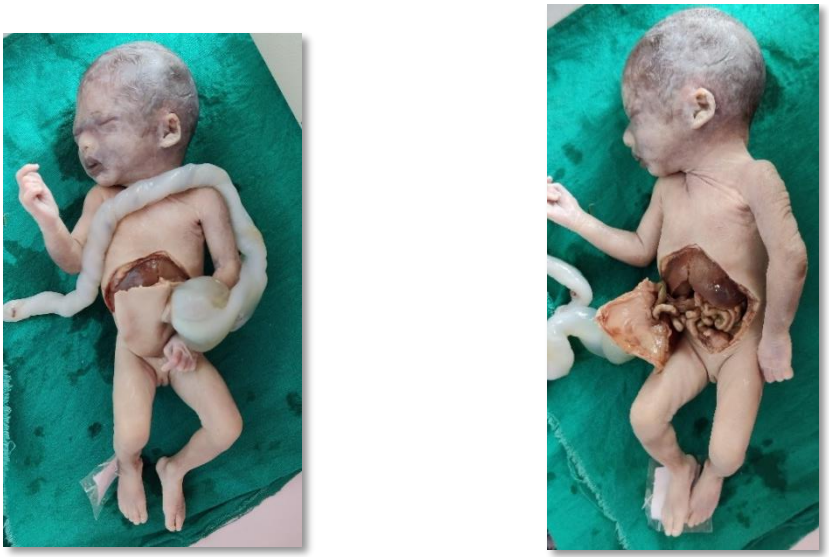


Fig.4: Cleft lip

Fig.5: Single nostril



(a) (b)

Fig.6 a and b: Omphalocele

IV. DISCUSSION:

Results showed a high prevalence of congenital anomalies which could be responsible for significant mortality, warranting the need for asurveillance programme and birth defect prevention and detection services. It is important to have adatabase to know the overall burden and spectrum of congenital anomalies in the country. In my study the commonest anomalies were the central nervous system followed by GIT than musculoskeletal deformities.

Gupta et al[8] also found the commonest anomaly was nervous system malformations (41.9%) similar to that of Mashuda et al[9] who noted 29.8% of nervous system malformations in their study.Sachdeva et al[10]also reported central nervous system as the most common anomalies followed by musculoskeletal anomalies whereas in my study most common is CNS followed by GIT.

Studies from Southern and Eastern India reported musculoskeletal anomalies as the most common[11,12] Musculoskeletal malformations was also detected as the most common anomaly and was followed by central nervous systemanomalies than genitourinary system malformations and Gastrointestinal tract malformations.[13]

But in Kumar J et al[14] the congenital malformation of the circulatory system was the most common (28%) followed by musculoskeletal (18.60%) and urinary system (14.3%).

In the studyconducted by Jayashree S and D'Couth S[15], themost common among the anomalies were those affecting the renal system. 271 (29.75%) babies had renal anomalies. The next common was the anomalies affecting skeletal system. 220 babies (24.15%) had deformities of skeletal system. Nervous system involvement was seen in 198 (21.73%) babies.According to Wills V et al[16], the middle part of Kerala also showed an increased incidence of urogenital anomalies (28.5%).

Congenital heart defects were the most commonly reported anomalies in the study conducted by Bhide P et al.[17]

V. CONCLUSION:

Various studies have detected high percentage of congenital anomalies. This present study also detected high percentage (17.5%) among the foetuses collected for thesis purposes. This creates a necessity to broaden the study population to all the stillbirths in the Institute as well as District hospitals and Private Clinics in Manipur. Consequent upon the findings of this aforesaid larger study, need to review, upgrade and enhance prenatal counselling and diagnosis in Manipur can be appraised to the concern authorities for further preventive remedies.Maintenance of a congenital malformation registry of the state of Manipur is required and plannings to require for interventions to reduce morbidity and mortality associated with congenital anomalies.

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