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Prevalence of Congenital Anomalies and Associated Risk Factors in Pregnant Women: A Review

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Abstract: ***A review on the prevalence of congenital anomalies and associated risk factors amid pregnant women. Congenital malformations are the most salient conviction of neonatal and perinatal deaths. Anomalies can be categorized according to the seriousness, systems involved. The classification of the congenital anomalies can be based on the ICD-10 classification for the congenital anomalies. Methods- Our initial step to construct a review article was to employ a literature review search, followed by Google scholar and PubMed databases, extracted articles were looked with the keywords such as prevalence, risk factors, congenital anomalies in pregnant women. Those published between 2011 to 2021and satisfying the admittance criteria were involved in the present review.***

Conclusion-Congenital anomalies are the uttermost prime cause of perinatal and neonatal death in the underdeveloped nations. Most common anomalies observed were with congenital heart defects. Regular antenatal checkups can slacken the pervasiveness of congenital anomalies.

Keywords: prevalence, congenital anomalies, neonatal passing, consanguinity

I. INTRODUCTION

Congenital anomalies are one of the significant reasons for neonatal flagitiousness and mortality. They are otherwise called, innate issues, inborn distortions, and birth deserts. These remember abandons for the infant's capacity, digestion and construction. There has been an increment in pace of pre-birth passing because of inherent irregularities. There has likewise been an increment in the utilization of alkylation specialists, illumination drinking, anti-metabolites, smoking and ecological pesticides which are known to be the causing specialist of inborn abnormalities. Intrinsic peculiarities represent 13-16% of neonatal passings, 8-15% of perinatal passings in India.[1-3] The location of inherent inconsistencies happens moderately late, particularly in a non-industrial nation like India and more in rustic India. It isn't just a main source of fetal misfortune, yet additionally contributes astoundingly to preterm birth, adolescence and grown-up grimness alongside significant reaction on the moms and their families.[4-5]Congenital oddities are not viewed as a great concern medical condition in India, inborn irregularities were assessed to be the fifth biggest conviction of newborn passing in India. The ornamentation and plenitude of different innate irregularities range from country to country and in disparate pieces of India because of dissimilarity in ethnic, financial and geological factors. Based on World Health Organization (WHO) report, around 3 million embryos and babies are brought into the world every year with pivotal innate anomalies.[6-8] They are almost found in 3% generally of newborns. The analysis of intrinsic mutations is hereditary (30-40%), environmental (5-10%).Out of the hereditary etiology, chromosomal irregularity comprises 6%, single quality issues 25% and multi-factorial 20-30%, for almost half of innate oddities, the reason is yet to be known.[9-11] Consanguineous relationships have been outline as a significant segment for adding to extended measure of intrinsic anomalies. Studies have demonstrated remarkably higher occurrence of contortions in off springs of consanguineous parents.Congenital abnormalities are apportioned by seriousness into major and minor anomalies[12-13]. They can likewise be arranged into three gatherings of seriousness: minor, extreme, and deadly anomalies. Severe and deadly peculiarities together are considered as major anomalies.Maternal contaminations with rubella and syphilis are additionally affirmated as the danger of birth surrenders in low and center pay nations as there are more inconvenient teratogenic danger factors as compare to big time salary countries.There was general recognition that the shirking of inherent distortions during pregnancy requires hazard pinpointing.[14] The acknowledgment of adaptable danger elements of birth abandons give an opportunity to avoidance which incorporate counteraction of explicitly sent diseases, up gradation of wellbeing dietary propensities and palisade of food sources with folic corrosive, and forestalling maternal contamination during the periconceptional period(1month before origination and multi month after conception).The most common anomalies were musculoskeletal anomalies, among the commonest anomalies of musculoskeletal the congenital talipes equinovarus(CTEV) was found in most of the cases. The incidence of anomalies

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showed that the babies which were stillborns had more number of anomalies in concordance with livebirths, also some of the previous studies showed that the women which were booked also had more chances of anomalies then unbooked women[15]

II. METHODS

The review was performed to estimate the prevalence of congenital anomalies and associated risk factors among pregnant women.

A. Data Sources

The Google Scholars and PubMed were looked for articles published in 2011 to 2021 utilizing the search string “prevalence of congenital anomalies and associated risk factors among pregnant women.

III. CONGENITAL ANOMALIES PREVALENCE

Most of the studies showed the rate of prevalence of congenital anomalies between 8-15% of perinatal deaths and 13-16% of neonatal deaths. Studies which were hospital based showed the variance in the prevalence rate that is 1.9%-3% nearly.[16]Discernment of the congenital anomalies occurs lately especially in the developing countries leading to more chances of the occurrence of congenital anomalies.[17-18].Some of the variations that contribute to the increased incidence can be due to the differences in the socioeconomic background ,race, ethnicity, inadequate .Most studies showed that the males are on the higher risk of having a congenital anomaly. Most prevalent anomaly was shown as the congenital heart defects basically the atrial septal defects and the ventricular septal defects. The most frequent nervous system anomalies were the neural tube defects (NTDs), One out of 44 births were affected with major anomalies and one out of 152 births was affected with congenital birth defects. [19-21].The etiology of the birth defects can be described as genetic factors accounted for most of the percentage that is 30-40% followed by the environmental factors (5-10%).[22]

IV. ASSOCIATED RISK FACTORS

There are several risk factors that are associated with the prevalence of congenital anomalies in the pregnant women. Some factors associated are the increased use of irradiation, alkylating agents, smoking, environmental factors, consumption of alcohol. [23].Parental consanguinity,maternal under nutrition, past history of congenital anomalies in the family, obesity, low birth weight .Mothers infected with rubella, maternal illness like folic acid deficiency, diabetes mellitus, iodine deficit mothers, exposure to chemicals are more likely to prone to cause congenital anomalies. Maternal age of more than 30 years of age are more likely to have chances of having a baby with some birth defects, [24] Also the increased no of abortions positively associated with more risk of birth defects. Women having less or no antennal checkups were also on the higher side of the risk of having baby with congenital malformations.[25]There was also an positive association between the gravida 2 or more than primi-garvida was reported[26,27]

V. DISCUSSION

The incidence of the congenital anomalies showed that the neural tube defects (NTDs) were the commonest of all the anomalies observed in the hospital based studies.The prevalence of congenital anomalies can range from country to country but is most common in the developing countries. There are few factors which contribute for the increased incidence of anomalies like inadequate folic acid during the periconceptional period, consanguinity, increased maternal age,exprosure to chemical, smoking and drinking during the pregnancy[28-30]The prevalence of the congenital heart defects was the most commonest among all the types of anomalies.[31].Congenital malformations has become the important conviction of perinatal mortality in developed countries and promptly become important cause of perinatal mortality in developing countries.[32].The rate of prevalence can also vary due to the method of data collection used in the study or the study design. Some studies showed higher rate of prevalence more than expected due to the methodology employed in a tertiary care hospital.

VI. CONCLUSION

Congenital anomalies are one the major concerns for perinatal and neonatal deaths in the developing countries. Birth defects account for 1-3% deaths per 10000 births in India. Most common anomalies found were to be the congenital heart defects. Regular antenatal checkups and early diagnosis can be drop of the prevalence rate. More awareness should be raised about the risk associated with the birth defects. Most the occurrence of the congenital anomalies were positively associated with the risk factors such as maternal age, consanguinity, exposure to chemicals, drugs, consumption of alcohol, maternal infections like rubella. Also the gravida 2 and primi gravid has a positive association with the congenital anomalies. Males are more prone to have a birth defects .To decrease the risk of

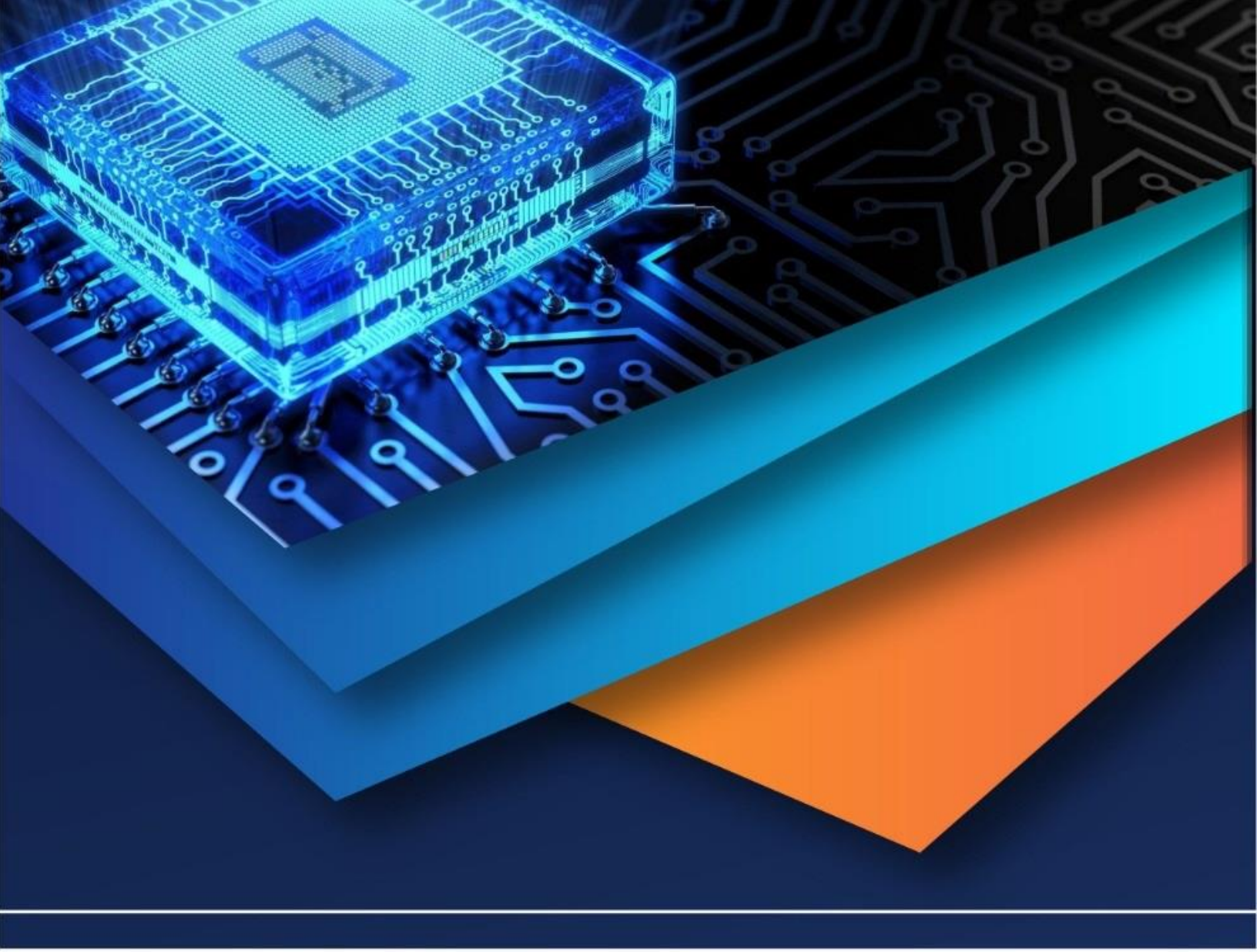
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congenital anomalies proper folic acid administration during the periconceptional period should be given, so that the risk of anomalies likes cleft lip and palate can be prevented. More of the malformations were in the stillbirths than livebirths.Low birth weight was also associated with the risk of congenital malformations.

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