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Research Article

A DESCRIPTIVE RESEARCH TO ASSESS THE CONGENITAL ANOMALIES AND PREVENTIVE COMPATIBLE STRATEGIES TO DEAL SUCH ANOMALIES¹Dr. Nauman Ahmed, ²Dr. Muhammad Tauqeer Razzaq, ³Dr. Shaheryar Malik¹QAMC Bahawalpur, DHQ Hospital Kasur²QAMC Bahawalpur, BVH Hospital Bahawalpur³Aimc Lahore, Jinnah Hospital Lahore**Abstract:**

Objective: To determine the incidences and potential human body systems affecting the congenital disorders and to recognize the compatible strategies for the prevention of such disorders.

Material and Methods: Our descriptive research was carried out at Allied Hospital, Faisalabad (September 2016 to October 2017). We studied every newly born child was examined for congenital disorders pertaining to multiple system types and consisting of both genders. The diagnosis was aided with different modern techniques involving MRI, Barium studies, X-Rays, Topography, ECG and Ultrasound.

Results: A total of 4201 admissions were studied. Out of these, 371 congenital disorder cases (8.83%) were diagnosed. The cases included 220 male and 142 female children with the percentages of 59.30% and 38.27% respectively. Ambiguous gender distribution was observed in 9 cases (2.43%). Out of 371 congenital anomalies cases, 156 babies (42.05%) were produced through C-section surgery whereas the rest were delivered normally (57.95%). Some general anomalies found during the research were 89 cases of CNS (23.99%) followed by 74 cases of intestinal anomalies (19.95%) and 61 CVD cases (16.44%). The prevalence of respiratory cases was 35 (9.43%) whereas 18 cases of the urinary system (4.85%) were not normal. Fort eight cases (12.94%) of dysmorphic babies and 17 cases of palate and cleft lips were found during the research. Rest of the cases (29 cases) were labelled as miscellaneous cases (7.82%).

Conclusion: Most of the Neonate Intensive Care Unit (NICU) admissions were due to congenital disorders. Such disorders were found in both genders with male babies leading female babies in number. The usual anomalies included CNS, Gastrointestinal and cardiovascular disorders in a majority of the cases.

Keywords: Congenital Anomalies, Cleft Lip, Neonate, Central Nervous System (CNS), Cardio Vascular Diseases (CVD).

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INTRODUCTION:

The term congenital anomalies include functional, structural and/or metabolic disorders prevailing in newly born babies. It might also include physical or mental incapacity. Congenital disorders are contributing a lot to the mortality rate of infants around the world. The poorer countries lack the diagnostics and healthcare facilities necessary for identification and treatment of such anomalies [1]. The prevalence and types of such disorders are varying in nature at different geographical locations. The diverse nature of congenital disorders around the globe may be attributed to the social, environmental and biological factors. To evaluate the incidences of congenital disorders, we need to focus on various parameters for exact prediction of anomalies in that part of the world. The incidences of congenital anomalies during diagnosis is normally lower (2-3%) than the actual prevalence of disorders reported after delivery (up to 5%). The diagnosis is made by applying suitable surgical and non-surgical procedures. However, 60 – 80 children suffering from such disorders cannot be identified during the diagnosis [2]. The environment affects 10% – 20% of cases of congenital disorders. The ratio of the babies suffering from congenital anomalies and experiencing pre-natal death is 12% – 32%. A number of birth complexities such as cleft lips, defective organs, mental & physical disability, heart-related issues, pyloric stenosis etc. can be minimized by use of Folic Acid by the women during their pregnancies. To overcome such problems, a practical strategy is required to be implemented and eliminate the incidences of congenital anomalies by employing effective screening programs and educating the public about the cure and prevention used for these disorders. The current research is very useful and typical of its type as not enough data on this topic is available in our country. Most of the healthcare centres even don't bother to keep a record of such anomalies [3]. The research also throws light on the prevention methods and finds out the anomalies that can be stopped by taking appropriate precautions.

Our research is focused on finding out different systems which contribute to the prevention of congenital disorders and also suggest methods for the prevention of such anomalies in babies before and after birth.

MATERIAL AND METHODS:

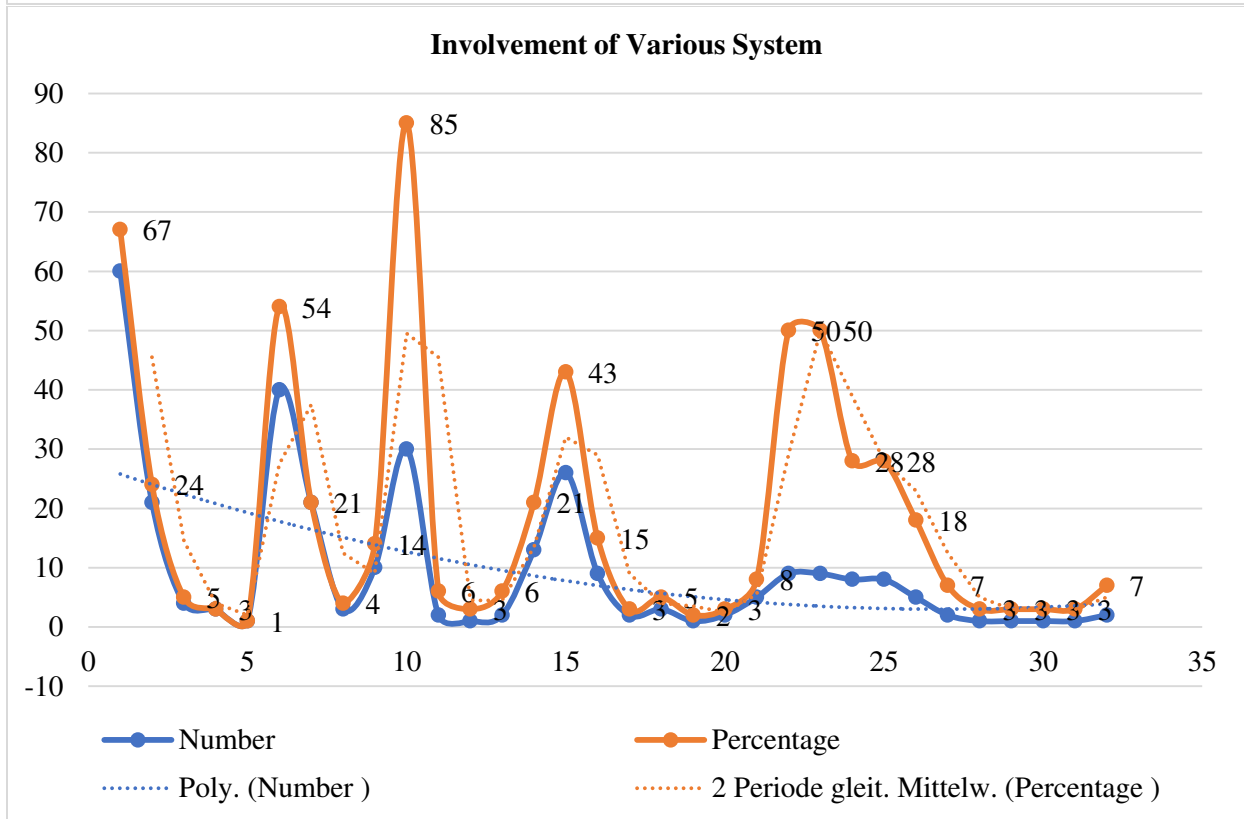
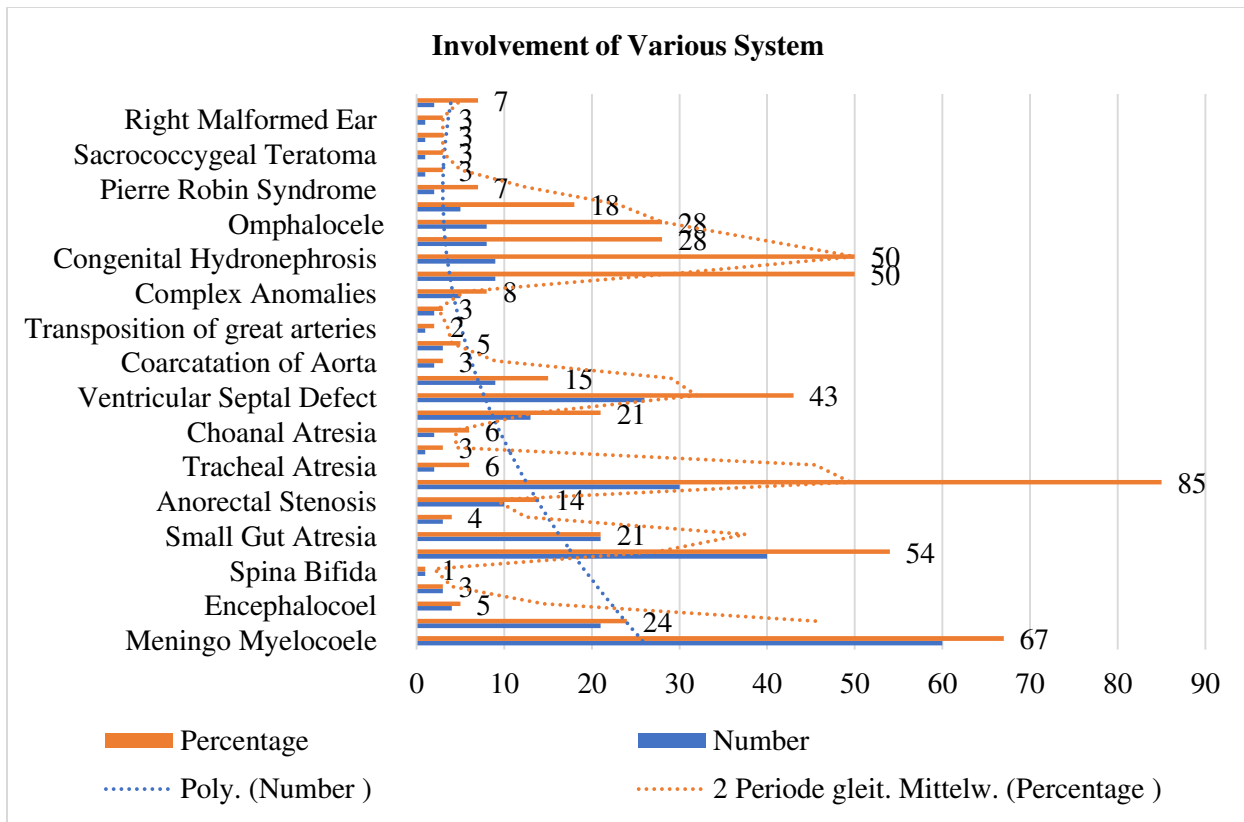
Our descriptive research was carried out at Allied Hospital, Faisalabad (September 2016 to October 2017). The equipment used for diagnosis was calibrated and up to date and the patients from all across the country visit the hospital for quality treatment. The staff and equipment have all the potential to deal with the complex delivery cases. The record for every neonate is maintained on a register kept at NICU. The detail of congenital anomalies for each child admitted to the Intensive Care Unit (NICU) is entered in the register. Clinical findings (MRI, CT Scan, X-ray, Ultrasound and barium test) were conducted as per prescription by child specialist. Data were analyzed using SPSS. The data was presented in forms of frequency and percentages for gender, defective systems and mode of delivery.

RESULTS:

Out of a total of 4201 admissions in NICU, 371 cases of congenital disorders were studied in this research which is 8.83% of the total admissions. Both genders were observed in these cases with 220 males (59.30%) and 142 females (38.27%). Nine cases of ambiguous gender (2.43%) were also recorded during the study in which male dominance was observed. The babies were delivered by vaginal and C-section procedures. The number of vaginal and C-section cases were 215 (57.95%) and 156 (42.05%) respectively. Central Nervous system (CNS) cases were prevalent in most of the babies (89 cases, 23.99%) CNS deformations were found in 21 cases (23.60%). Gastrointestinal anomalies were graded second with 74 cases (19.95%). Cardiovascular diseases were found in 61 cases (16.44%). Urinary system disorders were observed in 18 neonates (4.85%).

Table: Frequency of different systems involved in congenital anomalies

| Category | Systems involved | Number | Percentage |
|--------------------------------|---------------------------------|--------|------------|
| Central Nervous System | Meningo Myelocoele | 60 | 67 |
| | Hydrocephalus | 21 | 24 |
| | Encephalocoel | 4 | 5 |
| | Microcephaly | 3 | 3 |
| | Spina Bifida | 1 | 1 |
| Gastro Intestinal Tract | Imperforate Anus | 40 | 54 |
| | Small Gut Atresia | 21 | 21 |
| | Hirschsprung Disease | 3 | 4 |
| | Anorectal Stenosis | 10 | 14 |
| Respiratory System | Tracheo Esophageal Fistula | 30 | 85 |
| | Tracheal Atresia | 2 | 6 |
| | Hypoplastic Lung | 1 | 3 |
| | Choanal Atresia | 2 | 6 |
| Cardiovascular System | Tetralogy of Fallot | 13 | 21 |
| | Ventricular Septal Defect | 26 | 43 |
| | Atrial Septal Defect | 9 | 15 |
| | Coarctation of Aorta | 2 | 3 |
| | Patent ductal arteriosus | 3 | 5 |
| | Transposition of great arteries | 1 | 2 |
| | Dilated Cardio Myopathies | 2 | 3 |
| | Complex Anomalies | 5 | 8 |
| Genito Urinary System | Ambiguous Genitalia | 9 | 50 |
| | Congenital Hydronephrosis | 9 | 50 |
| Miscellaneous | Congenital Diaphragmatic Hernia | 8 | 28 |
| | Omphalocele | 8 | 28 |
| | Down Syndrome | 5 | 18 |
| | Pierre Robin Syndrome | 2 | 7 |
| | Edward Syndrome | 1 | 3 |
| | Sacroccygeal Teratoma | 1 | 3 |
| | Cystic Hygroma | 1 | 3 |
| | Right Malformed Ear | 1 | 3 |
| | Epigastric Hernia | 2 | 7 |



DISCUSSION:

The babies who were treated for any congenital malfunction remain at an increased risk after discharge from the hospital. The mental, physical or social performance of such patients can be affected at a later stage in life [4]. In some cases, antepartum deaths were observed especially in developing countries [5]. The current research consisted of 371 congenital disorder cases filtered from a total of 4201 admissions at NICU [6]. The research sample consisted of 220 males and 142 females and 9 cases of anonymous gender. The sample composition is comparable to many other studies conducted on this topic [7].

The systems affected by congenital anomalies include Central Nervous System (CNS), Gastro-Intestinal System, Palate and cleft lips, Urinary System etc. Most of the cases in the CNS category were related to the Neural Tube Defects (NTD). The neural tube closure defects are mainly caused in women having their 3rd or 4th pregnancy [8] and similar CNS anomalies have been reported by the various author.

Congenital disorders which are physical in nature (not mental disorders) are easily identified at the time of birth [9]. The gynaecologists advise the patients to take sufficient multivitamin (Folic Acid) which has resulted in a decrease in NTD in many developed countries. Besides CNS, other defective systems such as Gastro tract (74 cases) was treated as a second major congenital anomaly in our research [10]. Cardiovascular defects & Respiratory defects were graded as 3rd & 4th with (74 cases, 19.95%) and (35 cases, 9.43%) respectively. Urinary tract defects were observed in 18 cases (4.85%).

In a research by Tuncbilek, included defective systems for congenital anomalies included were a genitourinary system, Spinal system and Cardiac issues. The prevalence of these anomalies was 14.4%, 11.70% and 8.28% respectively. The most occurring anomaly in his research was also related to CNS [11]. Another research on the subject came up with the varying order of involvement of defective systems in newborn babies. Domestic researches from Abbottabad, conducted in Ayyub Teaching Hospital delivered the prevalence of CNS in 31% of cases and among these NTD were found in 77% of cases [12]. Cardiovascular malfunctions & Urinary tract disorders were also found in 16% and 6% respectively. The results support the outcome of our research. Our study also observed palate and cleft lips cases in 4.58% cases. The mortality rate of Palate and Cleft lips babies is high but when grouped with other

defective systems becomes as higher as it reaches 60% [13]. Fifty percent of these disorders can be prevented. Birth defects can be controlled by regular checkup of pregnant ladies from the pre-natal healthcare facilities and appropriate dietary & food supplement consumption as suggested by a worthy specialist during all trimester of the pregnancy.

CONCLUSION:

Most of the Neonate Intensive Care Unit (NICU) admissions were due to congenital disorders. Such disorders were found in both genders with male babies leading female babies in number. The usual anomalies included CNS, Gastrointestinal and cardiovascular disorders in a majority of the cases.

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