

FREQUENCY OF NEURAL TUBE DEFECTS AMONG 1000 PREGNANT WOMEN DELIVERING AT PMC HOSPITAL NAWABSHAH.

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Abstract:

Introduction: Due to absence of Neural Tube closure assortment of Central Nervous system anomalies emerges, which is reasons for high dismalness and mortality in Neonates and infant considerably awful mental effect over family and incredible monetary loses. **Objective:** The study intended to decide the frequency of NTDs among One Thousand (1,000) ladies delivering babies in the Labor room of a Tertiary Care Hospital. **Study Design:** Descriptive study. **Data Collection and Analysis:** Study started from January 1st, 2019 to December 31st, 2019 in the Department of Obstetrics and Gynecology in relationship with Pediatrics and Neurosurgery Department. All children delivered in the labor rooms were examined for NTDs. Those determined to have NTDs were conceded into the extraordinary consideration child unit for perception and documentation. **Results:** Among 1000 patients, 56 women had fetuses or newborn with neural tube defects (5.6 per 1000 births). Anencephly [n=2 (4%)], Enecephlocele [n=12 (21%)], meningocele / Meningomyelocele associated with hydrocephalus [n=30 (54%)] and 8 (54%) patients of Meningocele / Meningomyelocele without hydrocephalus were found, spina bifida occulta [n=4(7%)], were the malformation detected. Among 56 affected NTDs, n=30(54%) were female and n=26(46%) were male. This difference is statistically significant (p<0.05). Among 56 women affected NTDs, n=6 (11%) had 13-20 years, n=40(71%) had 21-40 years while n=9 (16%) had above 40 years. Amongst the mothers with affected babies, n=26(46%) women were primiparous and n=30 (54%) women were multiparous. Determinations were made by antenatal ultrasonography half (50%) and clinically half (50%) after the birth of kids. 02 (4%) patients were smokers and 54 (96%) were non-smokers. Some patient are already taken drug such 36 (64%) patients were taken folic acid, 1 (2%) patients was taken Valporic Acid, whereas 2 (4%) patients found with other drug history. **Conclusion:** The prevalence of NTDs in this study is in reliable with writing and literature. Improvement in maternal nourishment and antenatal folate admission is suggested.

Keywords: NTDs, Central nervous system, Neonates, Prevalence

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Introduction

Deficiency of Neural Tube conclusion assortment of Nervous system variations from the norm emerges which are foundations for high morbidity and mortality in Neonates, generously terrible mental effect over family and extraordinary financial loses. Globally, One estimation that the predominance of NTDs is 1 to 5/1000 live births and the danger of repeat is 2–3%¹ almost twofold or more than that, On reports the rate of NTDs is fluctuate starting with one nation then onto the next nation and even with territories in the equivalent country². As indicated by World Health Organization (WHO) birth surrenders influence approximately 1 out of 33 babies, bring about 3.2 million birth deficiency related disabilities every year, and record for roughly 270,000 infant expires

yearly³. Neural Tube Defects (NTDs) is the usual inherent deformities, In USA 0.6 per 1,000 live births affected⁴. Literature pursuit no precise information accessible for the frequency of NTDS in Pakistan however from senior wellbeing experts recommend that it is presumably higher apocalypse run (1 to 5 for each 1000 live births) for the most part because of Nutritional inadequacies, Family relationships, Drugs symptoms for example valporic acid use. NTDs are brought about by the unusual conclusion of neural tube from day 22 to 28 days after origination, bringing about auxiliary imperfections, frequently lead to the perinatal disclosure of neural tissue and this, thusly, may prompt serious disability in the kid's physical and mental development.^{5,6} Neural Tube deficiencies having two fundamental categories: One influencing cerebrum structures

– Anencephaly (nonappearance of brain structures) and Encephalocele (Herniation of Meninges and brain tissue), second spinal cord inadequacies – for example, Meningocele (Herniation of meninges), Myelomeningocele (Herniation of Meninges just as neural tissues) and some different types of spina bifida^{7,8} Hydrocephallus which is characterized as extreme collection of cerebrospinal liquid in CNS may likewise be seen, which is related with neural tube defects of any kind or may in alone. Congenital hereditary anomalies, for example; aqueductal stenosis or formative issues related with neural tubedeficiencies like spina bifida and encephalocele are the significant reasons for hydrocephalus, Intraventricular drain, meningitis, tumors, horrible brain injury, or subarachnoid discharge which delay the exit of CSF from the ventricles to the cisterns.⁹ Two significant components causes NTDs: one-Inherited variables – Gene changes and chromosomal variations from the norm¹⁰ and second maternal factors, for example, Folic corrosive use, age, ethnicity, weight and the utilization of antiepileptic drugs¹¹. We have a place with zone where poverty, lack of parity diet, uninformed population, unfamiliarity, lack of wellbeing health conveniences and ill-advised antenatal visits. NTDs are more usual in our nation as per senior wellbeing professionals, from one investigation that just with the utilization of folic acid the NTDs can be decreased 60-70%¹². Primary fetoprotein and ultrasound is a compelling strategy for identifying NTDs¹³. Exceptional consideration given to infants who brought into the world with neural tube defects, either they need clinical consideration or any careful intervention, best of our insight that no any past examination in regards to pervasiveness of NTDs did in our general vicinity so we offer concentration to

discover how much prevalence is in our general vicinity and to exercise over these issues that in future such commonness/rate can be diminished by taking explicit estimates which required.

Data Collection and Analysis: This Study completed in one year and started from January 1st, 2019 to December 31st, 2019 in the Department of Obstetrics and Gynecology in relationship with the Department of Pediatrics. All children conveyed in the labor rooms were examined for NTDs not long after birth. Those determined to have NTDs were conceded into the extraordinary consideration child unit for perception and documentation.

Results: Fifty-Six women had fetuses or newborn with neural tube defects (5.6 per 1000 births). Anencephly [n=2 (4%)], Enecephlocele [n=12 (21%), meningocele / Meningomyelocele associated with hydrocephalus [n=30 (54%)] and 8 (54%) patients of Meningocele / Meningomyelocele without hydrocephalus were found, spina bifida occulta [n=4(7%)], were the malformation detected. Among 56 affected NTDs, n=30(54%) were female and n=26(46%) were male. This difference is statistically significant (p<0.05). Among 56 women affected NTDs, n=6 (11%) had 13-20 years, n=40(71%) had 21-40 years while n=9 (16%) had above 40 years. Amongst the mothers with affected babies, n=26(46%) women were primiparous and n=30 (54%) women were multiparous. Determinations were made by antenatal ultrasonography half (50%) and clinically half (50%) after the birth of kids. N=02 (4%) patients were smokers and n=54 (96%) were non-smokers. Some patient are already taken drug such n=36 (64%) patients were taken folic acid, n=1 (2%) patients was taken Valporic Acid, whereas n=2 (4%) patients found with other drug history.

Table No. 1 (Shows the CNS Anomaly, No of Cases, and Percentage)

CNS Anomaly	No. of Case	Percentage
Anencephly	2	4%
Encephalocele	12	21%
Meningocele / Meningomyelocele with Hydrocephalus	30	54%
Meningocele / Meningomyelocele without Hydrocephalus	8	14%
Spina Bifida occulta	4	7%
Total: 56 Patients		

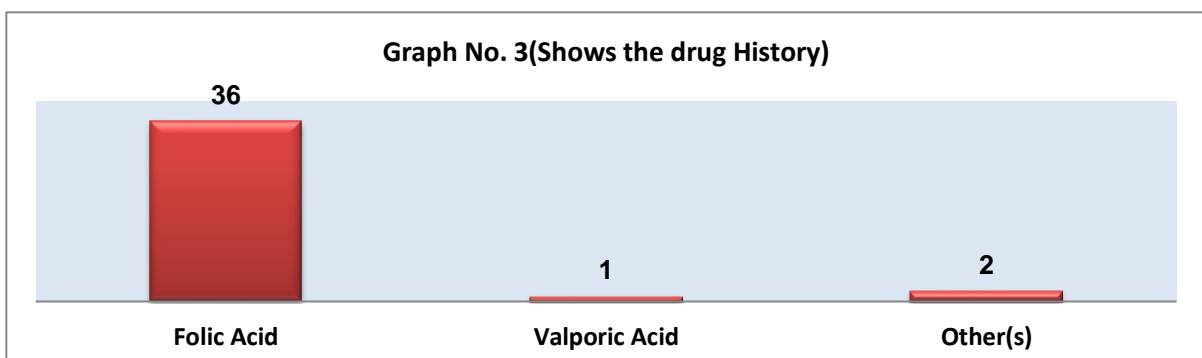
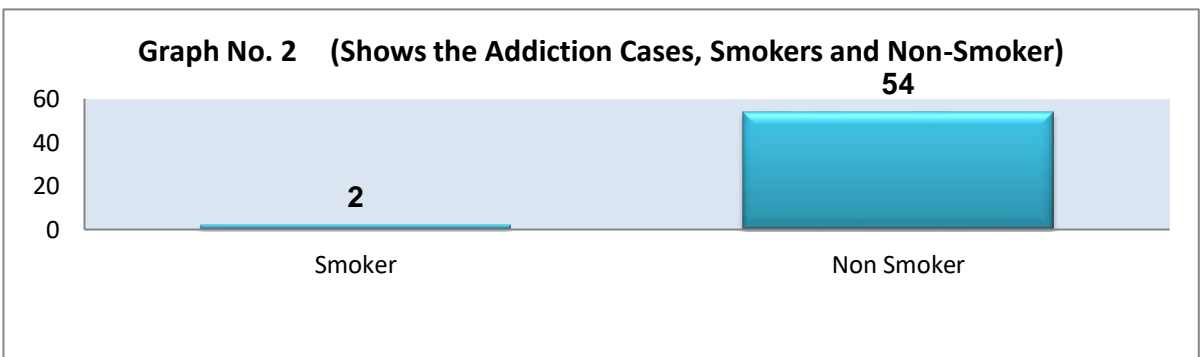
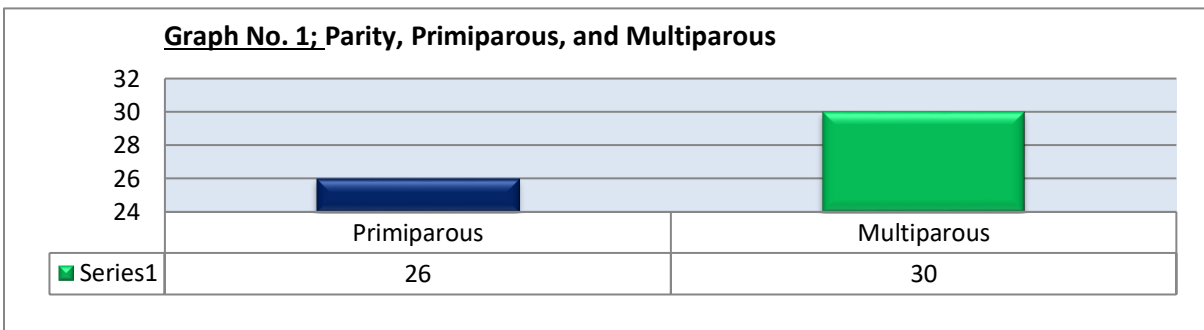
Table No. 2 (Shows Gender, Percentage and Female to Male Ratio)

Total:	56	Percentage	Female to male ratio
Female	30	54%	1.15:1
Male	26	46%	

Table No. 3 (Shows Maternal age)

Maternal Age	No.	%
13 - 20 Years	7	13%
21 - 40 Years	40	71%
Above 40 Years	9	16%

Pic No. 1 (Showing the CNS Anomalies)



Discussion:

The Neural Tube deficiencies / congenital abnormalities because of shortage of Health Facilities, Malnutrition, and Family relationships are typically not analyzed antenatally, yet regardless of whether analyzed making mental pressure guardians and family because of its helpless result, likewise loss of cash because of significant expense treatment / multidisciplinary methodologies. Birth Prevalence of NTDs in this our study is a 5.6/1000 births. Whereas, world wide, generally 2-3/100 kids are carried with birth defects from which 2.5/1000 children brought into the world with NTDs that is the reason NTDs are major horrible and mortal birth abandons¹⁴. Various examinations has been completed all around the world and in Pakistan for NTDs predominance and its treatment yet less work in provincial regions of Sindh, Pakistan. The point of our investigation was to get a thought of predominance of NTDs in our areas it supposedly is regular here because of absence of wellbeing officials and bigger territory of referral to PMC, so to center over issue explanation for that and oversee as conceivable by featuring them. The distinctions could be credited to the denominator (live-births) utilized in the past investigations, though the populace tested in this included both live and stillbirths. It is anyway tantamount to the overall scope of 1 –5/1000 births and accordingly concurs with the perception that detailed rate of NTDs changes from nation to nation and even with areas in the equivalent country.^{1,2} In an imminent survey of fetal innate abnormalities in Sokoto, North-West Nigeria, Singh et al. seen that CNS irregularities were the significant type of inborn abnormality, and spina bifida comprised about 44% of all CNS anomalies. It has been indicated that there is diminished maternal folate level in NTD-affected pregnancies and antenatal folic acid supplementation is routinely offered to ladies going to antenatal care.³ The rate of NTDs has declined altogether inside 30 years and now it happens in roughly 0.5–2 for each 1000 pregnancies worldwide.⁸ We saw that NTDs were marginally higher in females contrasted with males and our finding is reliable with the literature.^{3,6} The distinction could be credited to ethnic, racial, and natural factors that are known to influence the pervasiveness of NTDs. The hazard factors saw in this investigation were a maternal febrile sickness in all the trimesters of pregnancy and low–financial class despite the fact that there was no factual essentialness. The majority of the NTDs saw in this examination were available in moms matured somewhere in the range of 21 and 40 years 71% (40/56), trailed by young moms 11% (6/56). Interestingly, different examinations have watched the predominance of NTDs more with cutting edge maternal age (>35 years).¹⁴ Mothers of equality 2–4 were for the most part influenced in this investigation, and this is in concurrence with different discoveries, however a few

examinations watched a higher pervasiveness among the amazing mutiparous women^{5,6} Though, another investigation from India demonstrated a high predominance of NTDs in the primigravida. The major inherent abnormality coinciding with NTDS is hydrocephalus, and this was recognized in 30 out 56 (54%) of children with Meningocele / Meningomyelocele in our examination. Most of the NTDs in this examination are confined and not related with hereditary disorder. Relationship with hereditary conditions expands the danger of repeat in kin of influenced people by 25% while separated NTDs follow multi-factorial legacy pattern.¹⁴ Routine ultrasound screening during pregnancy can recognize 60–80% of major and 35% of minor intrinsic malformations.³ We have noticed that about half of the NTDs were analyzed during the antenatal period by ultrasound examine. Early location of inherent inconsistencies is suggested with the goal that the guardians could be satisfactorily guided on the alternatives of end of pregnancy. The World Health Organization expresses that every single pregnant lady should begin the principal antenatal consideration inside the primary trimester of pregnancy. This anyway may represent a few difficulties in resource-poor nations like Nigeria, where numerous ladies book their pregnancies late in the gestation.

Conclusion:

Patients with neural tube defects and along with other severe congenital anomalies are no need of surgical interventions. Patients with responsive neural tube defect and expected of better results and good quality of life should go for surgical interventions after proper counseling. To improve and control such type of diseases which causes awful mental affect over family and incredible monetary loses. Every health worker should give awareness regarding folic acid supplementation, to stop use of hazards drugs and radiations to the communities facing such type of problems.

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