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Research Article

A STUDY ON RISK FACTORS, VACCINATION STATUS AND OUTCOME OF TETANUS IN CHILDREN

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Abstract:

Introduction: Tetanus is a severe auditory but vaccine-avoidable disorder caused by *Clostridium tetani* that effect notable morbidity and dying among children in progressing countries.

Aims and objectives: The fundamental reason of the study is to inspect the study on hazards, vaccination status and result of tetanus in infants.

Methodology of the study: This random sample study was regulated in PIMS, Islamabad during March 2018 to January 2019. The information was assembled from 100 infants of both genders. The identification of tetanus was clinical, built on medical record and observation, finding out the existence of at the minimum three of the successive clinical discoveries: severe lockjaw, denial to feed, generalized muscle sternness, muscle spasm or unconstrained tetanic spasms. Blood samples were collected within one hour of hospitalization. Laboratory tests included full blood count, electrolytes, creatinine and glucose.

Results: The information was assembled from 100 patients. There were 69(69.0%) males and 31 (31.0%) females. general, the mean age was 6.55+3.14 years, and the ordinary age group at presentation was 5-11 years with 36(50.4%) cases. 49(66%) were unvaccinated, none (0%) had given booster dosage and post-trauma immune preventive treatment. The case casualty rate was therefore 62.8%, and did not change significantly over the 15 years ($P = 0.535$).

Conclusion: It is concluded that this cross sectional study has recorded high case casualty rates in Pediatric tetanus in the study area.

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INTRODUCTION:

Tetanus is a severe neurological but vaccine stoppable disorder produced by *Clostridium tetani* that makes notable morbidity and death among infants in progressing countries. A latest logical analysis of information from 1999 to 2011 showed that neonatal tetanus reduced in Africa at an annual rate adequate to attain the Millenium Development Goal 4 and it accounted for 19,000–275,000 neonatal deaths (1% of all child mortality) in 2011 [1]. On the other side, post-neonatal tetanus was responsible for less than 1% of worldwide infant's death. In Nigeria, of the four million babies born annually, 250,000 (4.9%) die within the first 4 weeks of life and tetanus accounts for up to 30% of these deaths [2]. Neonatal tetanus (NT) continues to be a main reason of death and neurological continuation for remainders yet it is highly defendable using simple and cheap public health interference. In 2013, NT was calculated to be accountable for 48,000 deaths, mostly in countryside areas of progressing countries where most births happen at home and are sometimes managed by unprofessional people using unclean ways without clean perinatal care [3]. NT is evaluated to present about 3% of newborns deaths in 2013, a reduction from 6% in 2001, but has a very high case death rate. Tetanus is a neuromuscular disease indicated by raised muscle tone and cramps. It is spread by tetano-spasmin, a toxin secreted by *clostridium tetani* [4]. *Clostridium tetani*, is a moving gram-positive spore forming obligate anaerobe (can survive without oxygen) with soil or dust as its natural domain. It occurs globally but is domestic in progressing countries and has resumed to be an obvious public health issue in nations that lack resources [5]. Tetanus is a vaccine defendable disorder and an important

reason of morbidity and mortality in progressing countries. In pediatric age group, the disorder is usually classified into neonatal and post neonatal tetanus.

Aims and objectives :

The fundamental reason of the study is to examine the study on possibility, vaccination status and results of tetanus in children.

METHODOLOGY OF THE STUDY:

This random study was conducted in PIMS, Islamabad during March 2018 to January 2019. The information was gathered from 100 children of both genders. Blood samples were taken within one hour of admission. Laboratory assessments included full blood count, creatinine, electrolytes and glucose. All the data were examined using SPSS version 21.0. All the numerical values were denoted in mean and median range.

RESULTS:

The information was gathered from 100 patients. There were 69(69.0%) males and 31 (31.0%) females. Overall, the mean age was 6.55+3.14 years, and the commonest age group at presentation was 5-11 years with 36(50.4%) cases. 49(66%) were unvaccinated, none (0%) had received booster dose and post trauma immune preventive treatment. The case fatality was therefore 62.8%, and did not vary significantly over the 15 years ($P = 0.5365$). Age at admission, presence of inflamed umbilicus, prostration, number of spasms per 5 minutes, NT score and presence of hypoglycemia were all associated were all significantly associated with death in the invariable analysis.

Age	Non protection detected by TQ's		Non protection detected by ELISA	
	n (%)	OR (94% CI)	n (%)	OR (94% CI)
1	21 (41.3)	1.00	25 (47.2)	1.00
2	25(45.0)	0.92 (0.44, 1.94)	23 (39.0)	0.789(0.37, 1.65)
3	32 (52.1)	1.62 (0.77, 4.00)	36(58.4)	1.56 (0.75, 3.31)
4	28(78.05)	4.42 (1.68, 11.62)	24 (72.5)	3.22 (1.27, 8.27)
5	22 (68.6)	3.26(1.29, 8.20)	25 (71.6)	2.82 (1.12, 7.01)
6	9 (60.0)	1.37 (0.45, 4.21)	7 (49.0)	1.15 (0.38, 3.58)

7	5 (40.0)	1.37 (0.40, 4.79)	7 (51.0)	1.15 (0.33, 4.10)
8	17 (89.9)	10.90 (2.26, 52.40)	14(82.3)	5.84 (1.51, 22.60)
9	8(42.2)	0.96 (0.32, 2.91)	8 (42.2)	0.84 (0.27, 2.48)
total	167 (55.6)	-	169 (55.3)	-

Table 01: Mode of infection in tetanus cases Age (years) Non-protection detected by TQS Non-protection detected by ELISA n (%) OR (94% CI) n (%) OR (94% CI)

DISCUSSION:

That probability of susceptible in case of tetanus grow with growing age was not shocking. Past details indicates that privilege against tetanus disappear with growing age. Many of the custodian who take part in the study could not give tetanus vaccination card, thus it may be logical to manage enhancing dose of TT to children in homogeneous case, mainly if they are male, not first born of their mothers and records of modern TT injection is insufficient[7]. In addition, children who adjacent with tetanus-inclined injury in the calamity unit would satisfied from anti-tetanus antibody. The procedure of enforcing at every moment is proposed by the Global Advisory Group of the WHO Expanded Plan on Immunization (EPI) since 1983 [8]. Tetanus has prevail a public health issues in growing countries with high case mortality rates. Attempt of neonatal, childhood and parental removal through prevention have faced provocation in these parts of the world due to low health realization, scarcity of human and material capital and poor health seeking behavior for trauma [9]. Because to the very nature of tetanus, hospital based analysis are found to be a successful means for assembling data on the epidemic and clinical data on newborn and childhood tetanus, and also for estimating the influence of immunization programs [10].

CONCLUSION:

It is assumed that this information has recorded high case casualty rates in Pediatric tetanus in the study area. Direct investigation of patients to recognize the progress of acuteness assists in identifying cases that needs respiratory support and drug rise.

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