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SCIENTIFIC CHARACTERISTICS OF TETANUS VICTIMS IN EMBRYOLOGY INTENSIVE CARE UNIT

[1]Memona Saleem, [2]Iqra Razzaq, [3]Ayesha Hashmi
[1]PMDC No. 108435-P, [2]PMDC No. 106514-P, [3]PMDC No. 108442-P

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Abstract:
Objective: *Tis exploration work aimed to examine scientific characteristics of tetanus victims in embryology intensive care unit (ICU) in Services Hospital Lahore.*
Methodology: *This research work is expressive study based on explanations carried out in Services Hospital, Lahore from January 2018 to December 2019. Tetanus Victims who got admission in pediatric ICU in the duration of this research work were the participants of this research work. We collected the data from files of the Victims and we also included the data about demography, clinical appearance, and severity grade, duration of stay in hospital, outcomes and complications. We also included the treatment expenses. We applied the descriptive statistics for the description of the findings.*
Results: *In the period of this exploration work, total twenty three Victims of tetanus got entrance in pediatric ICU in which 12 Victims were masculine and eleven Victims were ladies. Most of the Victims (13) were in the age group of two to six year of age. There were 17 immunized Victims and six Victims conventional only OPV & BCG. No patient was current appropriate protected for the age. Nine Victims were current with tetanus after operation, among them six Victims were males, five Victims had otogenic tetanus and nine Victims were present with no distinguishable portal of entry. Total 11 Victims were in the Grade-3 severity of organization of Ablett and six Victims were in Grade-4 harshness. There was degree of transience in our Victims of 26.0%. We observed autonomic variability in seventeen Victims and there was condition f ionotropic sustenance in all these Victims. The assessed expenditure of every day tetanus handling with use of powered freshening was about 31888 rupees and with no mechanical freshening, it was 199000 rupees.*
Conclusion: *Tetanus is totally avoidable difficulty with extraordinary degree of transience. The treatment of this illness is much expenditures in assessment with the inoculation which is open in our country. Appropriate upkeep of looped and comprehensive immunization is the best choice to reduction the tetanus problem.*
Keywords: *Frequency, treatment, Tetanus, complication, mortality.*

Corresponding author:
Memona Saleem,
PMDC No. 108435-P.

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INTRODUCTION:

Tetanus is the consequence of the Clostridium Tetani which creates a strong neurotoxin tetanospasmin which has the ability to disturb the CNS (Central Nervous System) [1]. This disease is totally avoidable with inoculation, there is very large problem of this disease in complete world. Global incidence of tetanus is about one million Victims per year with transience rate of 20% to 50% [2]. Mainstream of the Victims of tetanus follow powerful wound of skin. There is connotation of tetanus with the injuries, ulcer, snake bite, provision, injections and medical interference [3]. Tetanus outbursts have link with injuries linked with the natural tragedies like quakes and tidal wave [4-6]. With the immunization agendas, there is always failure in the incidence of tetanus [7]. The occurrence of tetanus is widespread in several countries of the world because of the shortage of vaccination plans [2]. In completely advanced countries high application of the active vaccination have donated a lot to failure the incidence of tetanus and this detail also reductions the high degree of injury as well as transience [8]. This exploration work carried out to control the incidence of tetanus Victims in our area, connected difficulties and consequences.

METHODOLOGY:

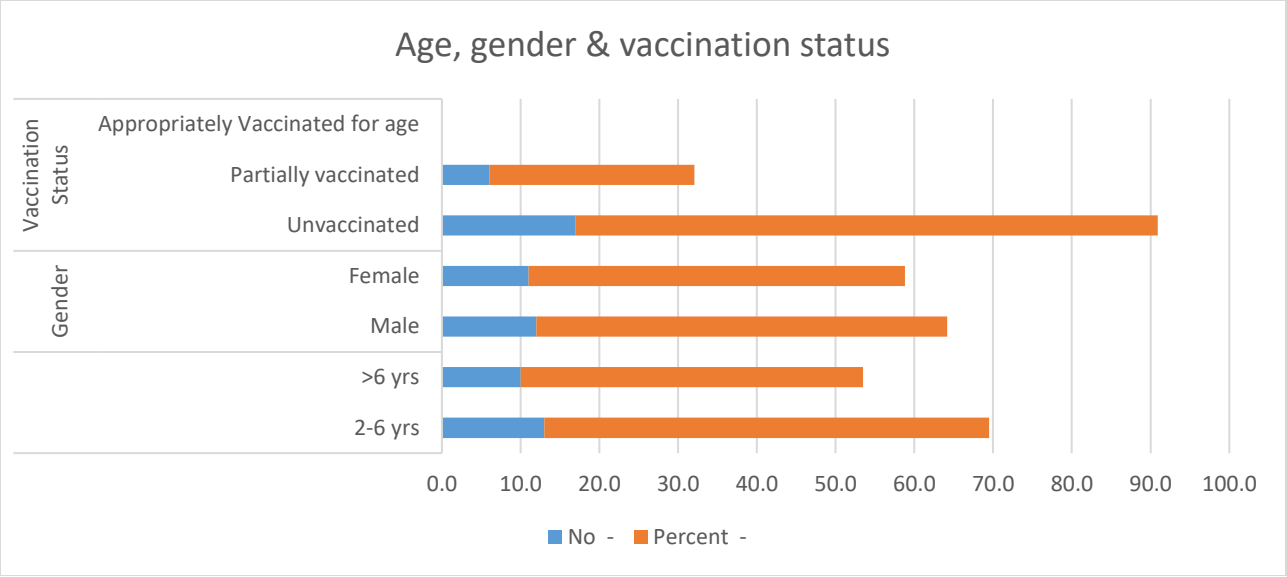
Offspring having the age of less than twelve years were the employees of this exploration work. We composed the statistics from the archives of the Victims. Material controlled statistics about profile of demography, clinical appearance, severity grade, duration of stay in ICU, related problems and result of disease. This record also delimited the handling expenditures. We smeared the expressive figures for the account of the conclusions. The tetanus organization highlights upon the upkeep of looped, toxin's nullification, antibiotic treatment, helpful precautionary actions as good treatment upkeep with seizures regulator and vigorous vaccination. We assessed the Victims totally for their breathing complaint, harshness score, and gateway of admission and position of coiled. We reserved all the Victims in separation. We started diazepam 5.0 to 10.0 mg/kg/day, 50.0% of dose being given IV, and 50.0% orally in 4 divided doses in all Victims. We carried out strict aseptic measures in complete treatment duration. We gave the Victims 0.50 ml tetanus toxoid as part of active immunization for their treatment. We also gave phenobarbitone to our Victims. We also gave 0.50 to 1.0 mg/kg/dose every six hourly, initially IV and later through oral way. There was requirement of a dose of 20.0 mg/kg/day six hourly in some Victims. We gave Midazolam 0.10 mg/kg/hour & atracurium 1.0 mg/kg/hour to the Victims who were in need off ventilation. We also started injectable magnesium sulphate for all Victims with a dose of 70.0 to 75.0 mg/kg and maintained them on 20.0 to 25.0 mg/kg/dose eight hourly for a mean duration of one single week. There was also requirement of inotropic in seventeen Victims. We also provided physiotherapy after their stabilization. This dose decreases the catecholamine releaseIn these Victims, we decreased the diazepam dose to 50.0%. Victims to use for at least three to four months. We counselled the Victims about the vaccination importance and we also provided them complete schedule for the active immunization and other family members. We gradually tapered the muscle relaxants for the prevention from stiffness and spasms and we advises.

RESULTS:

There were twelve male and eleven female Victims. Most of the Victims were present in the age group of two to six years. There were total twenty three Victims of tetanus who got admission in our institute in the duration of this research work from January 2018 to December 2019. There were seventeen unvaccinated Victims, 6 Victims were present with partial vaccination (only BCG and OPV at time of birth) and no patient was present with appropriate vaccination for age (Table-1). We saw no Victims with less than 2 years of age.

Table-I: Age, sex and vaccination status of tetanus Victims (n=23).

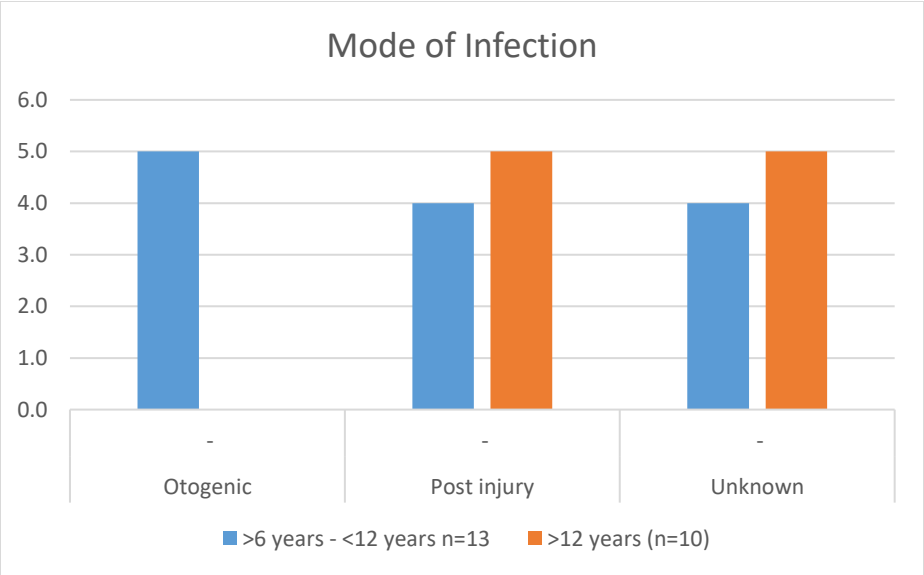
Variables		No	Percent
Age	<2 yrs	-	-
	2-6 yrs	13.0	56.500
	>6 yrs	10.0	43.470
Gender	Female	11.0	47.820
	Male	12.0	52.170
Vaccination Status	Partially vaccinated	6.0	26.080
	Unvaccinated	17.0	73.910
	Appropriately Vaccinated for age	-	-



We observed the mean IP (Incubation Period) in Victims of post-trauma as 7 days. The mode for tetanus acquiring is present in Table-2. We saw the otogenic tetanus in the age group of two to six years. Among nine Victims of trauma tetanus, seven Victims were present with trauma to the lower part of limbs. Six Victims were present in Grade-4 severity and no patient was present in Grade-1 severity. There were four Victims with altered GCS with ranging 8 to 12. We shifted seventeen Victims to wards and six Victims met their death. In accordance with the severity grade of Ablett classification, most of the Victims i.e. 47.82% (n: 11) were in Grade-3.

Table-II: Mode of infection in tetanus case (n=23)

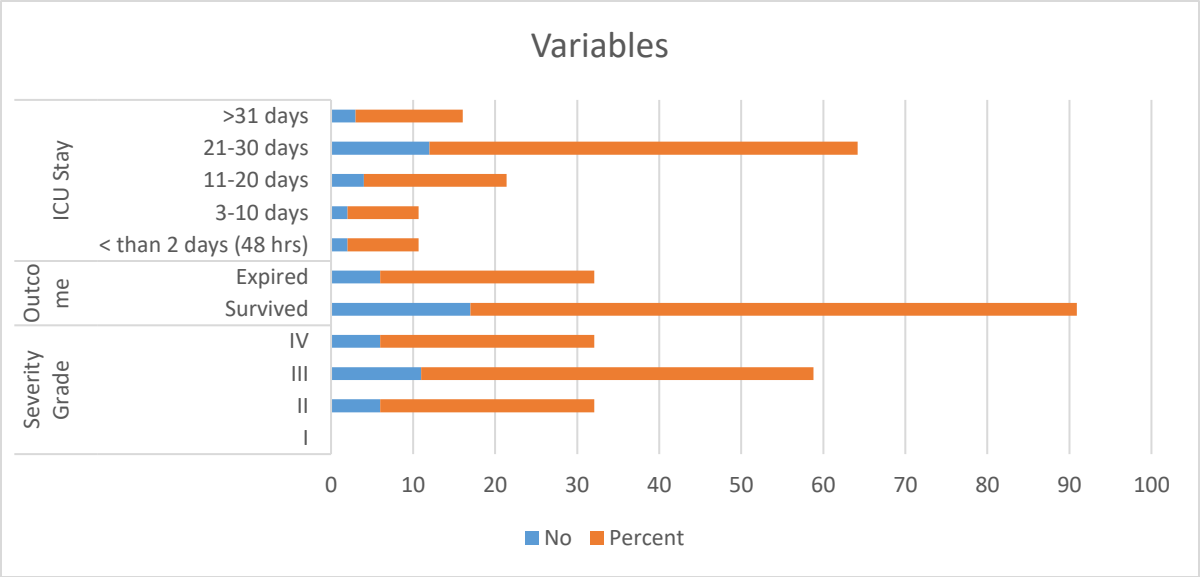
Mode of infection	< 2 years 2-6 years, n=0	>6 years - <12 years n=13	>12 years (n=10)
Post injury	-	4.0	5.0
Unknown	-	4.0	5.0
Otogenic	-	5.0	-



Three Victims among them stayed for greater than six weeks (Table-3). The stay of most of the Victims (n: 15) was greater than 3 weeks.

Table-III: Ablett grade of severity, out come and length of stay (LOS)

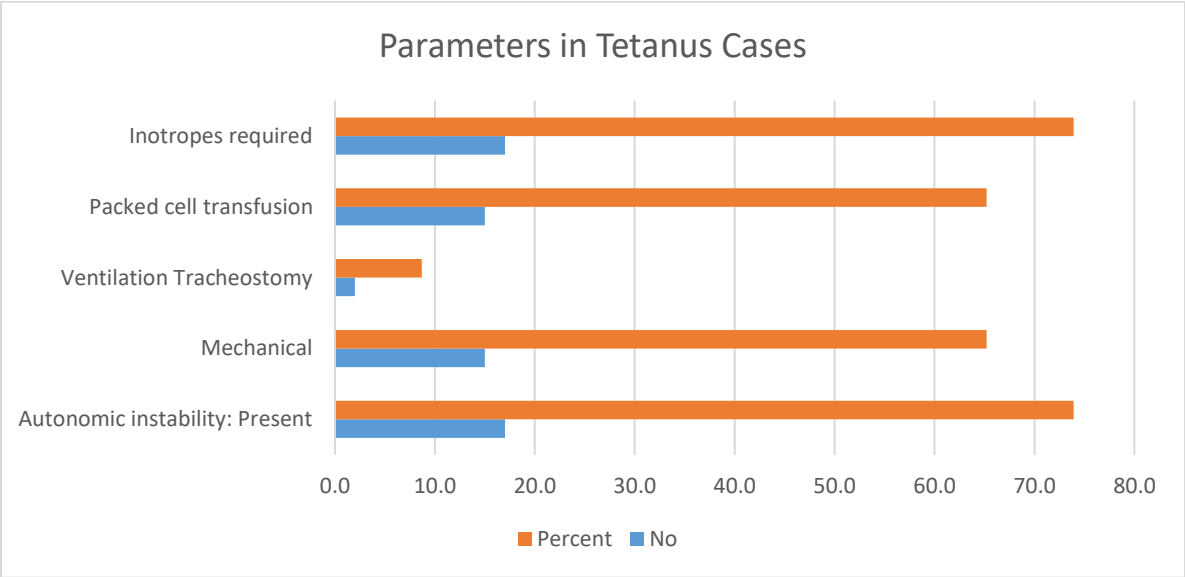
Variables		No	Percent
ICU Stay	< than 2 days (48 hrs)	2.0	8.690
	3-10 days	2.0	8.690
	11-20 days	4.0	17.390
	21-30 days	12.0	52.170
	>31 days	3.0	13.040
Outcome	Survived	17.0	73.910
	Expired	6.0	26.080
Severity Grade	I	0	0
	II	6.0	26.080
	III	11.0	47.820
	IV	6.0	26.080



Out of these fifteen Victims, five Victims were in Grade-4 and ten Victims were in Grade-3 of severity (Table-4). Total 15 Victims had to undergo intubation & mechanical ventilation for a mean duration of ten days with range of eight to twelve days.

Table-IV: Different parameters in tetanus cases n=23.

Parameters	No	Percent
Ventilation Tracheostomy	2.0	8.690
Packed cell transfusion	15.0	65.210
Inotropes required	17.0	73.910
Autonomic instability: Present	17.0	73.910
Mechanical	15.0	65.210



There was development of toxic shock syndrome and he expired. We observed the hypoxic brain injury causing in the neurological deficits in 3 Victims. We put them on anti-epileptics because of the persistence of convulsions. We recorded following complications in the Victims of this research work; infection of lower respiratory tract in 5, hypotension in seventeen, acute kidney infection in 15, sepsis in 10, constipation in twenty and only 1 patient was present with nephrotic syndrome lapse.

DISCUSSION:

There is always prevalence of this disease among males because males remain busy in more outdoor activities. About the trauma site, majority of the Victims was present with lower limbs injury which is in support of various research works [10]. This was a retrospective descriptive research work and we found a high prevalence of tetanus in the children having two to six year of age. This prevalence is much comparable with the other research works [11]. There is recommendation of routine tetanus vaccination for adults in every ten years [12]. Dissimilar to other diseases, this disease is completely preventable by active immunization [13]. Due to being an agriculture country, this complication is much common in our country so, the vaccination of this complication is very important . Much similar to other research works; trismus, stiffness of body and dysphagia were the most common complaints in our Victims [14]. We also noted that all the Victims were present without vaccination, which is much threatening fact that the vaccination rate in our children is falling [15]. The most common in the Victims of tetanus is the autonomic dysfunction [16]. There are various grading systems for the severity grading of the tetanus but we selected the Ablett classification [17]. There was need of mechanical ventilation in our fifteen Victims. The range of the rate of mortality of tetanus is from 20.0% to over 50.0% as presented in various research works [18]. It normally initiate after one week of the complication and lasts for one to two weeks. This is because of the impact of tetanus toxin on brain stem. This is mainly because of the paroxysmal increase in the sympathetic activity causing hypertension, pyrexia & tachycardia at times. The rate of mortality was 26.0% in this research work. [19].

CONCLUSION:

Mortality and high cost of treatment as well as proper care of wound and complete vaccination are the suitable options to prevent the frequency of tetanus among children which is a disease with high rate of morbidity

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