



Tetanus; Risk Factors and Management

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ABSTRACT

Objectives: Our objective was to study tetanus disease risk factors and modes of management and its recovery.

Design & Duration: It is a prospective type of cohort study. Completed in six months from January 2019 to June 2019.

Setting: This study was done in Nishter Hospital Multan

Subjects and Methods: Total 90 patients were studied which were admitted in medical unit of the hospital via OPD or emergency ward. Their age range was 15-30 years. A predesigned proforma was used to document data of each individual patient. A proper written consent was taken from the patients or their attendants for including patient in the study. Consent was also taken from the medical superintendent of the hospital for conducting study. Data was analyzed using Microsoft office (version 20) and results were expressed in the form of tables and charts. Confidence interval was 95% and margin of error was 5%. P-value less than 0.05 was taken significant and more than 0.05 taken non-significant. Frequency and percentages and means calculated. Sample size was determined through WHO software.

Results There were 90 patients studied including 50 males and 40 females. Total mortality rate was 33%, its mean 30 patients out of 90 died. These cases were admitted in ICU under continuous monitoring. Which patients experienced respiratory distress they underwent intubation and mechanical ventilation started. Risk factors in these cases were septic abortion, thorn prick, road traffic accident, household trauma, abscess, ulcer or burn, farm injuries and history of surgical intervention in previous two weeks. Among 40 females 24(60%) were high risk and presented in critical condition despite all measures and ventilator support 16(40%) died. Similarly out of 50 males 14(28%) were high risk patients and among them 13(28.2%) cases died despite all measures taken.

Conclusion: Tetanus is a life taking disease most common in underdeveloped and developing countries. In south asia it has high frequency. In this study mortality rate was more in females than males. All these cases were non-immunized against tetanus previously. Hence proper immunization and early diagnosis of the disease may decrease mortality and morbidity to much extent. Early diagnosis and quick management with ICU care and ventilator support are main components of management.

Key Words: Tetanus, risk factors, mortality rate, outcome

INTRODUCTION

Tetanus is a disease caused by clostridium tetani which produces specific toxin in the blood called tetanospasmin which produces pathology. In this disease initially patient experiences headache, spasm of muscles of jaws or other skeletal muscles of body. Latter on respiratory muscles get involve and may lead to respiratory arrest. Opisthotonus and high grade fever and fits are present in advance disease. According to a study in USA annually just 50 cases are reported of tetanus.³ In our society this disease is much more common. There are proper isolation rooms in good set ups for tetanus patients. Their average stay in the hospital is 3-5 weeks. These cases occur more in farmers as they get agricultural injuries and in children because they get road side trauma more while playing. In our country there is some deficiency in implement of immunization programme and there is not proper awareness among public. Dirty wounds or wounds infected with soil or feces are more prone to tetanus infection. There are other risk factors as well related to this infection such as septic abortions in the peripheral areas conducted by quakes or dais in unsterilized environment. In our society piercing of ears among females is very common for wearing jewellery but this is done using unsterilized needles which cause tetanus in young females. In Burn wounds skin is breached and if wound is large patient is also immune compromised which make them prone to this infection so in such cases tetanus vaccine is given as prophylaxis. Ulcers and abscesses and surgeries done in unsterilized environment all are risk factors of tetanus infection

PATIENTS AND METHODS

This is a cohort study of prospective type completed in duration of six months. This study was conducted in a tertiary care hospital of Multan. Patients admitted in the Medical ward diagnosed as Tetanus were included in this study. Inclusion and exclusion criteria were formed and according to that patients were included in this study. Both male and female cases were studied irrespective of their age or demographic distribution. Total 90 patients were studied which were admitted in medical unit of the hospital via OPD or emergency ward. Their age range was 15-30 years. A predesigned proforma was used to document data of each



individual patient. A proper written consent was taken from the patients or their attendants for including patient in the study. Consent was also taken from the medical superintendant of the hospital for conducting study. Data was analyzed using Microsoft office (version 20) and results were expressed in the form of tables and charts. Confidence interval was 95% and margin of error was 5%. P-value less than 0.05 was taken significant and more than 0.05 taken non-significant. Frequency and percentages and means calculated. Sample size was determined through WHO software.

RESULTS

There were 90 patients studied including 50 males and 40 females. Total mortality rate was 33%, its mean 30 patients out of 90 died. These cases were admitted in ICU under continuous monitoring. This is a cohort study of prospective type completed in duration of six months. This study was conducted in a tertiary care hospital of Multan. Patients admitted in the Medical ward diagnosed as Tetanus were included in this study. Inclusion and exclusion criteria were formed and according to that patients were included in this study. Both male and female cases were studied irrespective of their age or demographic distribution. Total 90 patients were studied which were admitted in medical unit of the hospital via OPD or emergency ward. Which patients experienced respiratory distress they underwent intubation and mechanical ventilation started. Risk factors in these cases were septic abortion, thorn prick, road traffic accident, household trauma, abscess, ulcer or burn, farm injuries and history of surgical intervention in previous two weeks. Among 40 females 24(60%) were high risk and presented in critical condition despite all measures and ventilator support 16(40%) died. Similarly out of 50 males 14(28%) were high risk patients and among them 13(28.2%) cases died despite all measures taken.

DISCUSSION

This is a cohort study of prospective type completed in duration of six months. This study was conducted in a tertiary care hospital of Multan. Patients admitted in the Medical ward diagnosed as Tetanus were included in this study. Inclusion and exclusion criteria were formed and according to that patients were included in this study. Both male and female cases were studied irrespective of their

age or demographic distribution. Total 90 patients were studied which were admitted in medical unit of the hospital via OPD or emergency ward. Risk factors in these cases were septic abortion, thorn prick, road traffic accident, household trauma, abscess, ulcer or burn, farm injuries and history of surgical intervention in previous two weeks. Among 40 females 24(60%) were high risk and presented in critical condition despite all measures and ventilator support 16(40%) died. Similarly out of 50 males 14(28%) were high risk patients and among them 13(28.2%) cases died despite all measures taken. Other major risk factor found among females was septic abortions in peripheral areas in unsterilized environment and this is also a main risk factor in a study done by V.R. Tindall et al.¹¹ Clostridium tetani is found mostly in warm and moist environments as in underdeveloped areas and in animal feces as well.¹² According to a study done by Altaf Hussain et al, anti tetanus serum is more effective than TIG.¹³ In united state of America cse fatality rate of tetanus is 30%.¹⁴ this low rate is due to propee awareness among their public, high literacy rate, early presentation in hospitals, well developed advanced resources for management of these patients are available there. But in underdeveloped countries mortality rate due to tetanus is very high as in the country of Uganda it is 68%.¹⁵ Tetanus is a disease caused by clostridium tetani which produces specific toxin in the blood called tetanospasmin which produces pathology. In this disease initially patient experiences headache, spasm of muscles of jaws or other skeletal muscles of body. Latter on respiratory muscles get involve and may lead to respiratory arrest. Opisthotonus and high grade fever and fits are present in advance disease.

CONCLUSION

Tetanus is a life taking disease most common in underdeveloped and developing countries. In south asia it has high frequency. In this study mortality rate was more in females than males. All these cases were non-immunized against tetanus previously. Hence proper immunization and early diagnosis of the disease may decrease mortality and morbidity to much extent. Early diagnosis and quick management with ICU care and ventilator support are main components of management. Lack of health facilities in remote areas is a main cause of high mortality rate due to tetanus.



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