



## Case Report

# A 41- year-old man with tetanus: A case report

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**Tetanus is uncommon in developed countries and it occurs in older adults. The majority of tetanus cases occur in third world countries and 50% of these cases occur in neonates. Tetanus is a rarely occurring disease in Iran. We report a 41-year-old man admitted to Imam Khomeini Hospital with spasms in face and lumbar muscles. Finally, inspite of intubation and drug therapy the patient was expired because of autonomic system disorder, and cardiac arrest.**

**Keywords:** Tetanus, Rare.

## INTRODUCTION

Tetanus disease is caused by *Clostridium tetani* which is an obligate anaerobic gram positive organism. Its spores are in soil and in the feces of humans and animals (Schwartz et al., 1990).

Despite the passive and effective immunization since 1893 and 1923, tetanus is still significant health problem in the developing world and is encountered in the developed world such as the United States. There are more than 800,000 deaths due to tetanus each year in the world (Farrar et al., 2000). The incidence of tetanus is between 500,000 to one million cases per year worldwide (Bleck et al., 1997). The majority of cases of tetanus occur in developing countries, which involve 50% of neonates. The most cases in developed countries happened in older adults (Samuel et al., 2001).

In Iran 244 cases were reported from 1978 to 1997. Because of high routine immunization coverage in Iran, tetanus is rare (Beheshti et al., 2002).

In this report we presented a 41-year-old man who admitted in Imam Khomeini Hospital with no history of previous immunization.

## CASE REPORT

A 41- year-old man, Injection Drug User (IDU), homeless from 10 years ago, with chief complaint of pain and stiffness in face and back muscles from two days ago was admitted to Emergency Ward in Imam Khomeini Hospital. At entrance time, he was conscious. In medical history, there was no history of vaccinations and taking drugs.

The vital signs were stable. Temperature was 37.5°C oral. In physical examination, there was a wound with diameter 3×4 cm in his right inguinal and pus secretion. We observed spasm in his jaw muscles and he was not able to open his mouth. There were occasional spasms in lumbar muscles which were starting by any stimulation and gradually added to severity of contractions and the intervals between contractions were decreased.

In Lab data, WBC (White Blood Cell) = 12000/ μL (P=65%,L=35%), HB (Hemoglobin) = 13 g/dL, Platelet count = 210000/μL, ALT (Alanine transaminase) = 23 lu/L, AST (Aspartate transaminase) = 26 lu/L, ALK (Alkaline Phosphatase) = 150, ESR (Erythrocyte Sedimentation Rate) = 30 mm/h, CRP (C-Reactive Protein) = 9 mg/dl, Urea = 34 mg/dl, Cr (Creatinine) = 0.8 mg/dl, Ca (Calcium) = 8.9 mg/dL, Na (Sodium) = 139

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mEq/L, HIV Ab: Negative, HCV Ab: Negative, and HBs Ag: Negative.

The patient was hospitalized in ICU with diagnosis of tetanus. Diazepam and Midazolam were prescribed for controlling the spasms, Metronidazole 500 mg as Intravenous per 6 hours for the wound, Tetanus Immune Globulin (TIG) 500 IU and one dose Tetanus and Diphtheria (Td) vaccine. Finally, in spite of intubation and drug therapy the patient was expired because of autonomic system disorder, and cardiac arrest.

## DISCUSSION

Tetanus is diagnosed by history and clinical signs. There are no laboratory tests for this disease. The first sign of tetanus is spasm. The muscle of jaw, neck, back and abdomen may be involved. The clinical features are related to the toxin named Tetanospasmin. Types of tetanus disease are variable. Those are generalized, Local, Cephalic and Neonatal tetanus. The manifestations of generalized tetanus include pain, stiffness, rigidity, opisthotonus, spasm which can lead to laryngeal obstruction. The spasms are painful and may be result in respiratory arrest and death. The local tetanus is follow by low mortality. Type of cephalic is an uncommon form that damages the cranial nerves. Neonatal tetanus occurs in the newborn around the first week of life (Farrar et al., 2000). Our case's chief complaint was pain and stiffness in face and back muscles. He had spasms in his jaw muscles which he wasn't able to open his mouth. Also, there was spasm in lumbar muscles occasionally.

The most cases of tetanus are as acute injury. There is non-acute injury in IV drug users, persons with chronic wounds and complications of diabetes (Hsu et al., 2001).

Treatment is neutralization of tetanospasmin and care for muscle spasms. Human tetanus immunoglobulin (HTIG) neutralize circulating tetanospasmin. The effective dose is 500 IU IM(International Unit Intra Muscular) (Blake et al., 1976).

To prevent production of toxin, antibiotics are recommended. Penicillin is the standard therapy for tetanus in most countries. Its dose is 100,000-200,000 IU/kg/day intramuscularly or intravenously for 7 to 10 days. Penicillin acts as a competitive antagonist to Gamma aminobutyric acid (GABA). Metronidazole is a safe alternative drug. The dose is 400 mg rectally every 6 hours. If these were unavailable, erythromycin, and clindamycin would be alternatives (Ahmadsyah et al., 1985; Ataro et al., 2011).

In our patient for emergency treatment to control spasms, we injected Diazepam and Midazolam and after that we injected 500 mg Metronidazol as intravenous per 6 hours for the wound, Tetanus Immune Globulin (TIG) 500 IU and one dose Tetanus and Diphtheria (Td) vaccine.

We present a 41-year-old man Injection Drug User. In spite of intubation and drug therapy he was expired because of autonomic system disorder, and cardiac arrest.

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