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# KNOWLEDGE, ATTITUDE AND PERCEPTIONS ABOUT TETANUS AND RABIES AMONG FAMILY PHYSICIANS; RESULTS OF A SURVEY AT A TEACHING HOSPITAL IN KARACHI, PAKISTAN

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## ABSTRACT

**Objective:** To assess the knowledge, attitude and perception among family physicians about tetanus and rabies. **Setting:** This study was conducted at the International Family Physicians Conference held at the Aga Khan University. **Method:** It was a cross sectional study of convenient sampling. The participants were asked to fill a pre-tested questionnaire comprising of 26 questions. Both open and close ended questions were included. A total of 111 doctors fulfilling the inclusion criteria filled in the questionnaire. **Result:** Out of 111 doctors who participated in this study, vast majority were working in the urban area (86.5%). 59.5% had not seen a case of tetanus and 71% had not seen a case of rabies in the preceding 6 months. Only 37% would use both tetanus toxoid and tetanus immunoglobulin in case of a dirty wound; 30% would administer tetanus toxoid and anti-tetanus serum in such a case. About 65% knew the current recommendation on rabies vaccination whereas 58% knew the correct post-exposure prophylaxis in case of suspected rabies. **Conclusion:** The level of knowledge about tetanus and rabies was clearly found to be deficient. More than half of the doctors enrolled in the study did not show correct knowledge on tetanus and rabies vaccination. The reasons for these deficiencies in knowledge appear to be inadequate teaching about these important diseases in the medical school. In addition, lack of reading habit and non-availability of continuous medical education programmes at the government level also contributes.

## INTRODUCTION

Tetanus is caused by the neurotoxin (tetanospasmin) elaborated by *Clostridium tetani*, a strictly anaerobic, Gram positive spore-forming rods. Disease results after a wound is contaminated by bacterial spores. The spores then germinate into vegetative form and elaborate the toxin. The neurotoxin, tetanospasmin is a zinc metallo-protease which cleaves synaptobrevin, a protein essential for neurotransmitter release. Tetanospasmin interferes with neurotransmission at the spinal synapses of the inhibitory neurons. As a result even minor stimuli result in uncontrollable spasm. The incubation period is 5-days to 15 weeks, average 8-12 days<sup>1</sup>. Tetanus has become rare in the developed countries as a result of mass immunization. It is still a major health problem in the developing countries. The estimated worldwide deaths from tetanus were 213,000 in 2002 including 198,000 in children under 5 years of age which also includes neonatal tetanus. A total of 610 cases of tetanus were reported from Pakistan in 2006<sup>3</sup>. Tetanus and rabies are both non-reportable diseases in Pakistan and the incidence is grossly under-reported. Mortality from tetanus approaches to 50% in developing countries like Pakistan<sup>4</sup>. Rabies is a high-fatality viral infection. All

carnivorous animals (dog, cat, jackal, mongoose, raccoon, fox and skunk) and bats are considered to transmit the virus through bites or licking abraded skin or mucosa or scratching of infected animal. Initial symptoms are malaise, headache and fever followed by violent muscle spasm, excitement and hydrophobia. In the final stages the patient exhibits symptoms of mania followed coma and death due to respiratory failure. Post-exposure prophylaxis (passive immunization) administered within 6 days is highly successful in preventing the disease. Wound washing with running water and cleaning with soap for 5 minutes reduces the chances of development of rabies by about 65%<sup>4</sup>. About 55,000 human fatalities are reported every year world wide of which 32,000 occur in Asia<sup>5,6</sup>. As rabies along with tetanus in a non-reportable disease its incidence is grossly under-reported. In Pakistan about 2000-5000 cases annually are estimated, in Karachi alone the incidence is estimated to be 7-9.8 cases per million of population per year<sup>2</sup>. General practitioners (Family physicians) are very important pillars of health care delivery system in Pakistan because they are easily accessible to public and provide initial treatment in cases of minor trauma and dog-bite. It is important to know the knowledge, attitude and perceptions of family physicians

about tetanus and rabies diagnosis, prevention and management to plan interventions. Both diseases are vaccine preventable. Both vaccines and post exposure prophylaxis is available in Pakistan.

## MATERIAL & METHOD

It was a cross-sectional study of convenient sampling. Research Officers contacted family physicians at the International Family Physicians Conference at The Aga Khan University (Jan 25-28, 2008) after consent the participants were asked to fill the pre-tested data sheet (questionnaire). A total of 26 questions were included in the questionnaire. Both open and closed ended questions were included Sample size: A total of 111 doctors filled the questionnaire fulfilling the inclusion criteria. The inclusion criteria were registered medical practitioner with medical degree (MBBS), irrespective of age or gender. The questionnaire was completed on the spot without consulting books, tablets, smartphones etc. Participants who insisted on keeping the questionnaire for later submission were excluded from final analysis. The total number of family physicians consented to participate was 150 and the number completed the questionnaire was 111. Data was analyzed by SPSS 13.0.

## RESULT

Out of a total of 111 participants 86.5% were practicing in the urban area while 13.5% in the rural set-up. About 29% had their independent private practice while 47% were working at government hospitals, 8% in private hospitals and 16% in teaching hospitals. Their median age was 30 years. Seniority level (Time since obtaining MBBS degree) was 5-20 years. About 38% were practicing for less than 5 years, about 30% between 5 to 10 years while 29% were practicing for over 10 years. 63% were family practitioners, 23% were medical trainees (postgraduate students), 7% consultants and 5% were teaching faculty. The number of adult patients they saw in clinics per day was between 8 and 68. In the last six months, 59.5% had not seen a case of tetanus and 71% had not seen a case of rabies, about 30% had seen 1-5 cases of tetanus, and 23% had seen 1-5 cases of rabies; In a case of minor trauma: 4.5% responded that no treatment is required, 45% would refer the case to hospital, 38% would administer tetanus toxoid alone and only 3.6% would give both toxoid and immunoglobulin. In case of a clean wound (unknown primary immunisation status) majority (62%) would give toxoid alone. For a dirty wound (unknown primary immunisation status), 37% would give both tetanus toxoid and immunoglobulin while 30% would administer toxoid and anti-tetanus serum. About 65% gave correct answer the

recommended rabies vaccination after animal bite while 58% knew correctly the recommended post-exposure active immunization against rabies.

## DISCUSSION

The majority of participants were either family physicians or post graduate trainees. The cohort was a mixture of experienced and junior cadre doctors. Majority was practicing in non-teaching government hospitals or had their own private practice. Vast majority were working in an urban set-up. Their experience/exposure to tetanus and rabies cases was also mixed. The level of knowledge about tetanus vaccination recommendation was deficient. One thirds of them would not treat a dirty wound themselves and instead would refer the case to nearest hospital. Their knowledge about rabies vaccination was also found to be deficient. One third of them did not know the correct rabies prophylaxis after animal bite. The reason for this deficiency in knowledge and correct practice appears to be due to the fact that only a quarter had been taught about rabies and tetanus in the medical school and only about 10% of them attended a seminar or lecture on these topics during the last one year. Only 16% said they read a medical journal article related to rabies or tetanus in the last 6 months. Shah SFU et al<sup>8</sup> showed that 19.4% doctors in their study had correct knowledge of first line treatment of dog bite wound and vaccination for rabies. In our study majority of participants showed correct knowledge in this regard. Similar deficiency in knowledge was reported from Tanzania<sup>9</sup> and India<sup>10</sup>. In a similar study from Pakistan<sup>11</sup> only 2% of doctors showed to have correct knowledge regarding tetanus immunisation in case of a dirty wound. While in our study this number was found to be 37%. But our study included doctors practicing in hospitals as well as family physicians though majority of them were working in a rural set-up.

## COMMENTS AND RECOMMENDATIONS

Our existing health system does not have an in-built mechanism through which the family physicians are exposed to continuous medical education. There is no system in place which ensures current and up-to-date knowledge and practice of doctors in general and family physicians in particular. At the government level there is no opportunity for the doctors both in and out of government service which provides any notable training programme through which doctors could enhance their knowledge and embrace new development in management and prevention of diseases. Various medical societies and professional medical organisations do have regular seminars and symposia but there is no other effective method to

improve the knowledge and practice of family physicians. We recommend:<sup>1</sup>. Inclusion of common and fatal though preventable infections viz tetanus and rabies in medical colleges mandatory teaching<sup>2</sup>. Refresher courses/ seminars/lectures on rabies and tetanus for family physicians and junior doctors<sup>3</sup>. Dissemination of basic and practical knowledge in a simple and easy-to-understand language on these two preventable infections through print/ television media<sup>4</sup>. Infectious disease society recommendations in the form a booklet to be disseminated amongst general practitioners and doctors.<sup>5</sup>. Refresher courses/ continuous professional development (CPD) and continuous medical education (CME) programmes for both rural and urban based family physicians should be organized at the government level.

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### Author's Contribution:

**Dr. Siddiqui S:** Study concept and design, protocol writing, data collection, data analysis, manuscript writing, manuscript review

**Dr. Jahan F:** Data collection, data analysis, manuscript writing, manuscript review

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**Dr. Wasay M:** Study concept and design, protocol writing, data collection, data analysis, manuscript writing, manuscript review