INTRODUCTION

Tetanus toxoid is one of the most commonly administered vaccines. In spite of clear-cut guidelines regarding tetanus immunization we have observed that tetanus toxoid injection is often given after injury without considering previous immunization status. This is often seen in health care providers where the correct knowledge then they will pass on the correct message to the community also. With this backdrop this study was planned with the following objectives 1. To assess the knowledge about tetanus immunization schedules in relation to injuries among doctors. 2. To assess their knowledge about tetanus immunization.

RESULTS AND STATISTICAL ANALYSIS

Data was analyzed using a computer and wherever applicable Chi-square test/Z test or Fishers’ Exact test was applied. RESULTS AND CONCLUSION: As many as 38.3% of doctors favored tetanus toxoid injection after every injury. The correct knowledge of immunization against tetanus in children, pregnant women and adults was 75%, 90.8% and 35.8% respectively. The knowledge regarding when to give boosters was even poorer. The present study showed that doctors had poor knowledge about tetanus immunization that needs to be improved.

KEY WORDS: Tetanus, toxoid, immunization, schedules, knowledge, doctors
A structured performa for self-administration was made in English, and was pre-tested in 20 doctors. All the selected doctors were contacted personally and performae were administered and collected then and there only. The data was analyzed using a computer, chi-square test/Z test and ‘Fisher’s Exact’ test was applied wherever applicable. The knowledge was compared to the standards as given below and categorized as correct and incorrect accordingly.

RESULTS

A total of 120 doctors were included in the study, out of which 43 were private practitioners, 41 were working in dispensary and 36 were working in hospitals, 70 were males and 50 were females.

As much as 38.3% doctors were in favor of giving TT immunization after every injury (Table 1). Significantly more private practitioners (51.2%) than dispensary doctors indicated need for TT immunization after every injury ($P=0.02, df =1, CI 7.1-46.9$). Also significantly higher number of male doctors (50%) recommended TT immunization after injury compared to only 22% female doctors ($P=0.003, df =1, CI 11.6-44.6$). Of those doctors who opposed giving TT after every injury, only 59.4% of them could state the correct reason that TT is not required if a person is already immune. The Knowledge regarding post-injury management was even poorer as only one-fifth of doctors knew it correctly when to give anti-tetanus-serum (ATS) along with TT.

Majority of doctors favored giving TT after burns (Table 1), the response being significantly higher among among doctors working at dispensary, followed by private practitioners (74.4%) and hospital doctors (66.7%), but the difference was not significant. The knowledge was significantly better among female doctors (88%) compared to 67.1% among male doctors ($P=0.02, df =1, CI 6.7-35.1$).

When respondents were asked how many years after primary immunization; will a booster be indicated, in case of injury? Less than half of the doctors responded correctly. There were wide variations in the time-period recommended for booster, ranging from six month to ten years (Figure 1). Table 2 shows that more than three-fourth of doctors had correct knowledge of tetanus immunization schedule in children less than five years. Knowledge regarding this was highest (85.4%) among doctors working at dispensary, followed by private practitioners (74.4%) and hospital doctors (66.7%), but the difference was not significant.

The correct schedule of TT immunization in previously unimmunized adults was known to only one-third of doctors. The knowledge was significantly better in private practitioners as more than half of them knew the correct schedule compared to dispensary doctors ($P=0.04, df =1, CI 1.5-42.3$) and hospital doctors ($P=0.02, df =1, CI 5.6-46.8$). Here the knowledge was also significantly better among males.

TT Immunization Schedule
- In children under five years: three doses of DPT at 4-8 week interval, starting at 6 weeks of age followed by a booster at 16-24 months. For other wounds: a booster if the person has not received TT in previous 10 years.
- In adults (previously unimmunized): Two doses of TT one month apart followed by third dose after 6-12 months. Every 10 years. For minor and uncontaminated wounds: one TT booster if the person has not received TT in previous 5 years.
- In adults (having complete primary immunization): Two doses of TT one month apart followed by third dose after 6-12 months. Every 10 years. For minor and uncontaminated wounds: one TT booster if the person has not received TT in previous 10 years.
(48.6%) compared to 18% in females ($P=0.001$, $df=1$, CI 14.8-46.4). The knowledge regarding when to give boosters after a complete primary immunization was very poor as less than one-tenth of the doctors knew it correctly. The knowledge did not vary much with workplace. Correct knowledge was slightly better among males (11.6%) compared to only 4% in females, but the difference was not significant.

**DISCUSSION**

The study has brought out major lacunae in the knowledge of doctors in Delhi. More than one-third of doctors were not aware of protective duration of immunity as 38.3% favored administration of TT after every injury. This coupled with poor knowledge about exact duration when to give TT booster in case of injury, is likely to result in unnecessary repeated immunization which may predispose to hyper-immunisation.[6,7] Although level of knowledge regarding TT immunization after burns and animal bites was good however a small lack of it among doctors is not acceptable.

Although National Immunization Schedule has been disseminated widely since the launch of “Expanded Programme of Immunization” in 1978, and it is expected that all the doctors know the correct immunization schedule, only three-fourth of doctors knew it correctly in relation to immunization against tetanus in children, 90.8% in pregnant women. Knowledge of TT booster in pregnancy was still poorer.

It was surprising to know that only one-third of doctors knew correctly the schedule for TT immunization in adults. The findings are similar to a study done in Karachi where only 25% of general practitioners had correct knowledge of pre-exposure TT immunization.[1] Even though the knowledge regarding post-exposure management of injury in an un-immunized person with TT and ATS was poor in the present study however it was much better compared to the study in Karachi wherein only 2% of general practitioners knew it correctly.[1] The knowledge of doctors in relation to their workplace and sex was on the expected lines. The poor knowledge regarding TT immunization in general population and patients as observed in various studies reflects the poor knowledge among doctors.[6,7]

The present study has sound methodology as a pre-designed and pre-tested performa was used in this study. Sampling method ensured representation of doctors from all over Delhi, both, government as well as private. However, the findings represent knowledge among doctors (non specialist) serving general population and patients as observed in various studies reflects the poor knowledge among doctors.[6,7]

The findings of the study indicate need for reorientation of all doctors, at different workplaces, on tetanus immunization with emphasis on completion of immunization schedules rather than single injection after every injury. They should also know the various vaccines available for tetanus prevention and their use e.g. DPT/DT in children and TT in pregnant women, adolescents and adults. It should also be emphasized that all types of injuries, including burns and animal bites are potentially at risk of tetanus. Doctors also need to know the duration of protection by tetanus immunization and importance of assessing previous immunization status in order to avoid unnecessary repeated immunization. Through CME programs including discussion on findings of such studies as the present one, besides posters at the workplace can be used to educate the knowledge to doctors.

**REFERENCES**