

SHORT ARTICLE

Tetanus Booster - A missed opportunityRajesh Gupta¹, Jagdish Chandra Mandliya², Yogesh Damodar Sabde³¹Assistant Professor, ²Associate Professor, Department of Pediatrics, ³Professor, Department of Community Medicine, R. D. Gardi Medical College, Ujjain, India[Introduction](#)[Conclusion](#)[References](#)[Citation](#)**Corresponding Author**Address for Correspondence: Rajesh Gupta, Assistant Professor, R. D. Gardi Medical College, Ujjain, India
E Mail ID: drrajesh93@gmail.com**Citation**

Gupta R, Mandliya JC, Sabde YD. Tetanus Booster -A missed opportunity. Ind J Comm Health. 2014;26 (2); 200-201.

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Tetanus a known childhood killer is an entirely preventable disease with tetanus toxoid (TT). Most of the research today is on neonatal tetanus owing to its high case fatality rate. Though the reported mortality with tetanus is lower in older age groups, the management of tetanus is still a challenge in resource constraint settings of developing countries like India. On this background the present study was designed to know the status of tetanus immunization among school going age group children. This was an OPD based survey targeting school going children (age of 5 to 18 years) attending Pediatric out-patient department (OPD) of a tertiary care teaching hospital. It was observed that out of 636, 299 (47%) children were vaccinated for diphtheria, pertusis and tetanus (DPT) booster at 5 years of age. Out of 374 children eligible for TT (10 to 16 years) only 37 (9.8 %) were immunized with TT at age 10 years. Out of 44 children at age of 16 years only 6 (13.6%) were immunized. Though there are strategies to immunize school going children under routine immunization programme, official records documented that the immunization coverage for TT was 68% in school going age group. Majority of (80%) the cases of tetanus were in non-neonatal age group (mainly school going group) in Madhya Pradesh, India. Based on these observations it can be concluded that the tetanus immunization coverage among children of school going age was poor in the given setting.

Key Words

Non-neonatal tetanus, School-going age-group children, Immunization.

Introduction

Tetanus is an acute, spastic paralytic illness historically called lockjaw that is caused by the neurotoxin produced by *Clostridium tetani*. Tetanus occurs worldwide and is endemic in approximately 90 developing countries. Tetanus is an entirely preventable disease with active immunization with tetanus toxoid. A serum antibody titer of ≥ 0.01 U/mL is considered protective [1]. In India, according to National immunization schedule, active immunization against tetanus is done with administration of tetanus toxoid as trivalent vaccine of diphtheria, pertusis and tetanus (DPT) at 6, 10, 14 weeks and boosters at 16-24 months and 5-6 years of age. Afterwards only tetanus toxoid (TT) is given at 10 and 16 years of age [2]. The active immunization with tetanus toxoid has an estimated failure rate of less than 4 per 100 million immune-competent persons [3]. The reports of department of health and family welfare, Govt. of Madhya Pradesh (MP) revealed that the number of non-neonatal tetanus were higher than the neonatal cases [4].

On this background we have done an OPD based survey targeting to know the status of tetanus immunization among school going age group children (age of 5 to 18 years) attending Pediatric out-patient department (OPD) of a tertiary care teaching hospital, R.D.Gardi Medical college located in district Ujjain, of Madhya Pradesh (MP) Province of India. Prior approval from institutional Ethics committee was taken for the study. Total of 636 children were screened during the period of June – August 2013 for their routine immunization with DPT booster at age of 5 years. Among these 374 children were aged between 10 and 16 years and were asked for tetanus toxoid (TT) vaccination as per the National Immunization Schedule (NIS). Our findings revealed that out of 636, 299 (47%) children were vaccinated for DPT booster at 5 years of age. Out of 374 children eligible for TT (10 to 16 years) only 37 (9.8 %) were immunized with TT at age 10 years. Out of 44 children at age of 16 years only 6 (13.6%) were immunized.

In developing country like India, infectious diseases are still major causes of morbidity and mortality. The case fatality rates of tetanus documented to be between 10 to 39.3% from different settings depending on the age

group, grade of tetanus, availability of intensive care, complications, etc [5]. The case fatality rate is very high in cases of neonatal tetanus. According to the worldwide estimates of The World Health Organization (WHO) in 2011, neonatal tetanus claimed 61,000 lives as compared to 12,000 by non-neonatal tetanus [6]. Owing to higher burden of neonatal tetanus, WHO is currently engaged in a global campaign for elimination of neonatal tetanus through maternal immunization with at least 2 doses of tetanus toxoid. But the data received from the official records of Government of MP in the year of 2012-13, revealed that out of 233 cases of tetanus documented in the province of MP, 187 (80%) were non neonatal cases [4]. The records also revealed that 67.57% and 67.77% children were immunized for TT booster at 10 years and 16 years consecutively in the year 2012-13 which itself is far behind the goals [7]. Therefore in the given setting the poor immunization coverage indicated a missed opportunity to prevent the incident cases of non-neonatal tetanus.

Though the mortality as well as morbidity with tetanus reduces in older age groups, the management of tetanus is still a challenge in resource constraint settings of developing countries like India. The three management principals of tetanus are: (1) to provide supportive care until the tetanospasmin that is fixed in tissue has been metabolized (2) to neutralize circulating toxin and (3) to remove the source of tetanospasmin. Because there is essentially no natural active immunity to tetanus toxoid, the only effective way to control tetanus is by prophylactic immunization [8]. According to the latest guidelines of centers for disease control and prevention (CDC), all the patients with unclean, major wounds with a history of unknown or <3 doses of tetanus toxoid containing vaccine should be given tetanus immunoglobulin (TIG) during the post exposure prophylaxis. But In low income settings like India, administration of TIG may not be a feasible option for individuals as well as state wing to its high costs [9]. The management of clinical tetanus patients is also very difficult in these settings of scarce availability of resources such as mechanical ventilation facilities with expert manpower trained in critical care management [8]. On this account in spite of the availability of simple preventive measures, tetanus remains a public health problem not only in neonatal age but also for non-neonatal age groups in the developing countries like India. But there are no prominent campaigns for the elimination of non-neonatal tetanus in MP, particularly in school going age group.

As the full immunization (vaccination of 1st year of life) coverage is achieving its targets, now the time has come that we should focus over booster vaccines as

well. Inclusion of newer vaccine is opposed at certain levels due to poor vaccination coverage in most areas of the country. As more and more newer vaccines are knocking the door to be included in NIS, strengthening of existing immunization coverage is the need of hour for adequate implementation of Government health programmes.

Conclusion

Most of the discussion at local as well as global level is on neonatal tetanus which of course deserves the attention. However there has been no discussion on the tetanus in school going children. Our findings show that the tetanus immunization coverage among children of school going age was poor in the given setting. Given the higher number of non-neonatal tetanus cases as per government records, there is a need to focus on tetanus booster immunization among children of school going age group.

Methodological Considerations

The data were collected on recall basis about immunization status due to unavailability of vaccination cards. This is hospital based data, community statistics is needed in a larger planned study.

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