Original Article

Tetanus Toxoid

Tetanus Toxoid (TT-2) Coverage & its Associated Socio-demographic Factors among Married Women of Reproductive Age in Urban & Slum Areas of Hyderabad

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ABSTRACT

Background: Neonatal tetanus is vaccine preventable infection & a cause of neonatal mortality in our country. TT-vaccination of women at child bearing age can safeguard women & reduce neonatal mortality.

Objectives: To assess the TT-2 coverage among women at reproductive age in Hyderabad urban & slum areas. To determine the socio-demographic risk factors influencing the TT-vaccination coverage.

Study Design: A community based cross sectional study

Place and Duration of Study: This study was conducted in Hyderabad city areas (Gari Khata, Noorani Basti), Latifabad Unit No: 5, 11, 12 & Qasimabad (Phase I, Sehrish Nagar, Nasim Nagar) from 15th June-15th August 2014.

Materials and Methods: 220 women of child bearing age were approached through convenience sampling. Questionnaire based interviews & examining the vaccination cards were study tools. Data comprised of categorical & continuous variables & was analyzed by SPSS Version 16. Categorical variables were analyzed by chi-square test; mean & standard deviation was calculated for continuous variables & were analyzed by applying student t-test. The p-value ≤ 0.05 was taken as level of significance for associations.

Results: TT-2+ coverage was 40.9 percent; 29.1% women were not ever TT-vaccinated. Significant associations were observed between TT-2 coverage & ante-natal visits (p=0.04), educational level (p=0.05); socio-economic class (p=0.02) & women's working status (p=0.01); Age & parity were not associated (p= 0.09 & 0.31 respectively). Most common reason for non-vaccination was unawareness about TT-vaccination schedule (30.5%).

Conclusions: Low TT-2 coverage in slum areas of Hyderabad demands attention of health care providers to help improve the situation.

Key Words: Tetanus toxoid, child-bearing age, antenatal visits, parity, urban, slum areas.

INTRODUCTION

Tetanus is a vaccine-preventable disease. It is a deadly infectious disease for which immunization is available in EPI at infant level and for females of reproductive age[1]. In 1989, the World Health Assembly called for the elimination of neonatal tetanus by year1995, and since then considerable progress has been made using the strategies of clean delivery practices, routine tetanus toxoid (TT) immunization of pregnant women, and immunization of all women of childbearing age with three doses of TT vaccine in high-risk areas during supplementary immunization campaigns[2]. A review of the literature found that TT vaccination coverage in Pakistan ranged from 60% to 74% over the last decade. Worldwide tetanus accounts for 5% of maternal deaths and 14% of all neonates deaths annually [3]. Low vaccination coverage, the main driver for neonatal tetanus in Pakistan, is due to many factors, including lack of awareness among public[1]. Large reductions in deaths due to neonatal tetanus have been reported following major increases in the coverage of tetanus toxoid immunization to the women at child bearing age[4]. World Health Organization (WHO) observes that for the woman to be protected during pregnancy, the last dose of tetanus toxoid must be given at least two weeks prior delivery[5]. The purpose of this study was to estimate the coverage of TT-2 among women of reproductive age and to sort out associated risk factors in target population in Hyderabad.

MATERIALS AND METHODS

It was a community based study conducted in Hyderabad city areas (Gari Khata, Noorani Basti), Latifabad Unit No: 5, 11, 12 & Qasimabad (Phase I, Sehrish Nagar, Nasim Nagar). These areas were selected in order to get mixed population sample. The duration of study was two months i.e from 15th June-15th August 2014.

Study population, Sample size & Sampling technique: Two hundred & twenty subjects were selected for the study through convenience sampling.

Inclusion & Exclusion Criteria: Married women at reproductive age (15-49 years) were approached & were interviewed with reference to the most recent pregnancy. Those who did not consent were dropped from the study. In case of joint families, a single

woman per family was selected in order to get broader representation of the target population.

Data Collection Tool & Analysis: After informed consent, the data was recorded on a questionnaire including demographic & social information likely to affect tetanus toxoid coverage. Women themselves were the respondents. Verbal history of TT-vaccination was taken & was confirmed by examining the vaccination card. To explore reasons of non-vaccination or partial vaccination, we included few open-ended inquiries in the questionnaire. The variables of interest were woman's age, parity, educational level, socio-economic & working status, TT-1, TT-2 & TT-2 + coverage; number of ante-natal visits undertaken during recent pregnancy, source of information for TT-vaccination & reasons for not being vaccinated. The data was analyzed by using SPSS Version 16. The categorical variables were analyzed by chi-square test; continuous variables were analyzed by student t-test. The p-value ≤ 0.05 was taken as level of significance for associations.

RESULTS

Two hundred & twenty women of reproductive age were approached for the interview. Regarding TT-vaccination, there were 40.9% women who had received two or more doses of tetanus toxoid; 30.0% had received only single dose of this vaccine & 29.1% were those who had never received tetanus toxoid vaccine (Chart I). There were 70% women who showed vaccination card; while remaining 30% did not have any record of vaccination against tetanus. The minimum age recorded was 18 years & maximum age was 46 years. The mean age was 32 years with standard deviation of ± 6.8 years. Age of women did not show any association with TT vaccination status of women (p=0.09). There was rural-urban imbalance regarding tetanus toxoid coverage (22.2% in rural as against 59.5% in urban areas) (Chart II).There were more than 70% women who were between para 2-3 (Chart III). No association of parity with TT vaccination was observed (p=0.31). 39.5% of women had undergone not a single ante-natal visit during recent pregnancy, 31.8% had only one such visit; while remaining 28.7% were those who had gone through two or more ante-natal check up. A statistically significant association was observed between total number of ante-natal check up & TT-2 vaccination coverage (p=0.04). Tetanus vaccination status was also related to educational level of women (p=0.05); but its strong association was seen with socio-economic class (p=0.02) & her working status (p=0.01). There were 4.1% women who gave past history of fits suggestive of neonatal tetanus in although there was no documentary evidence available. Regarding knowledge about TT-vaccine, 84.6% were aware about it; majority of them (73.8%) got information from some health care personnel (Chart IV). The most common reason for not being vaccinated was women's unawareness about the schedule of TT-vaccination & the place from where to get vaccinated (30.5%) (Table I).

Table No.1: Reasons for non-vaccination

Reasons as stated by respondents	%age
Don't know about place & time of receiving TT-vaccine	30.50%
Not allowed by husband/family	22.60%
Thought TT-vaccine was a contraceptive	16.30%
Found no time from household work	14.40%
Health center away from house	6.40%
Miscellaneous reasons	9.80%
Total	100.00%

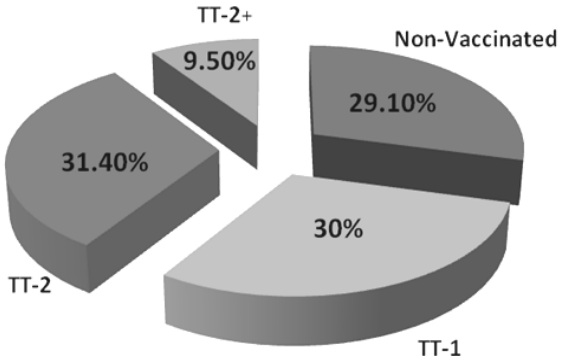

Chart No.1: Tetanus Toxiod coverage among study population (n=220)

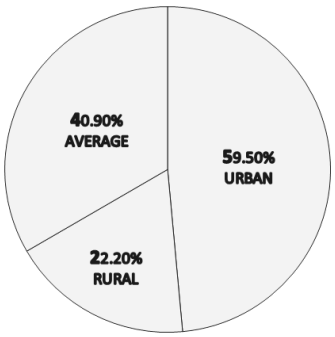

Chart No.2: Area wise TT-2 coverage

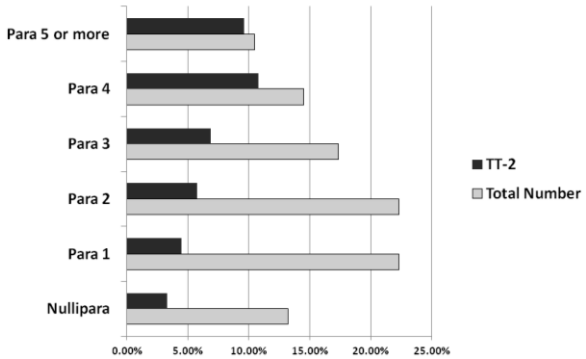

Chart No.3: Relation of parity & Tetanus Toxoid vaccination

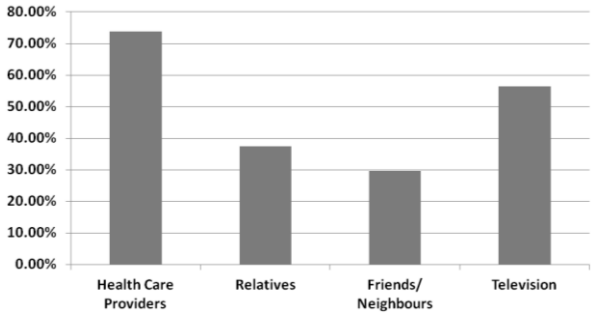

Chart No.4: Source of information about Tetanus Toxoid vaccination

DISCUSSION

The study on two hundred & twenty women revealed TT-2 coverage of 40.9 %.World Health Organization reported TT coverage of 56% in developing countries[6]. Afridi et al reported TT coverage of 65% among women of reproductive age in Peshawar[7]. Similar were the findings of Mansuri FA et al[8]. The lowered rate of vaccination coverage in our study may be due to small sample size or because slum population was over represented in our study resulting in incorporating less privileged women in our study. Our sample of two hundred & twenty included 78 women belonging to urban areas & 142 from slum areas. Siddiqui S et al highlighted in their study the extremely wide rural-urban disparity in TT vaccination coverage; the slum areas were most affected regarding missed opportunities[9]. Another reason could be that we excluded those women who could not show the vaccination card. Surprisingly, our study did not show association with age & parity of women (p= 0.09 & 0.31 respectively). Our findings were endorsed by another research in India showing no association of TT vaccination coverage with woman's age[10]. Abebe DS et al however argue that as parity increases, the coverage of TT-vaccine also increases[11]. The number of the ante-natal visits during recent pregnancy revealed significant association to vaccine coverage (p= 0.04); Hasnain S also concluded that the TT2 coverage was greater among the respondents who had antenatal care as compared to those who did not[12]. The antenatal visits provide an opportunity to women to come in contact with health care providers thus increasing the chances for women to get vaccinated. This was endorsed by Gitta SN et all, too[13]. Aboud S et al proved that the more the numbers of ante-natal visits are done, the lesser were the chances of missed opportunities for TT-vaccination[14]. The ante natal care coverage in Pakistan has increased from 61% in year 2007 to 87% in year 2010; still there is room for improvement[15].

One of the major factors responsible for under coverage of women for ante natal care is lack of awareness due to lack of education in our community. Lack of women educational was associated to under coverage of TT-vaccination (p=0.05) besides low socio-economic status (p=0.02) & working status (p=0.01). Nisar N et al concluded that education was significantly associated with utilization of maternal health services as 22% of illiterate women received antenatal care while 85% of literate women did so[16]. Unawareness, being less educated, poverty were reported to indirectly affect TT vaccine coverage through their effect on lowering antenatal visits[17]. Basher MS revealed illiteracy as one of the known important factors that stand in the way of vaccination[18]. As the female's level of education increases, the awareness among them regarding their health also increases and thus more females get themselves vaccinated[19]. The ante- natal visits provide direct interaction of women to health professionals & enhance the communication between them. An indirect evidence of this was revealed from our study by finding that 84.6% of the women we approached, were aware about it & majority of them (73.8%) got information from some health care personnel thus suggesting strong association with TT-2 coverage (p=0.04). Alam AY et al showed that tetanus toxoid coverage was higher among women utilizing antenatal care (92%) compared to those who were not (8%)[20]. In our study, women quoted various sources of information for vaccination including family friends, relatives, through television but majority of them came to know about it through health providers. The most common reason for not being vaccinated was that women were not aware about the schedule of TT-vaccination & the place from where to get vaccinated (30.5%). The same were the findings of Naeem M et al[21] & Rahman M et al[22] too.

CONCLUSION

We concluded that tetanus toxoid (TT-2) coverage of Hyderabad slum areas is quite low. The findings point to the need for a broad-based campaign to promote access to TT immunization as well as to promote the completion of all five TT doses in Hyderabad especially in remote & slum areas of the city. Based on these findings, we recommend community awareness programs in order to improve utilization status of preventive programs including vaccination.

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