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## TETANUS TOXOID VACCINATION COVERAGE AMONG PREGNANT WOMEN AT TERTIARY CARE HOSPITAL, SINDH PAKISTAN.

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### ABSTRACT

**OBJECTIVE:** To find out the Tetanus Toxoid (TT) vaccination coverage in the pregnant women and to assess the factors likely to be associated with TT vaccination coverage in women of reproductive age.

**SUBJECTS AND METHODS:** A cross sectional survey was conducted in the Obstetrics and Gynecology out Patient Department (OPD) of Isra University for the period of three months from March 2008 to June 2008. The population frame for present study comprise of all those women who came for antenatal care in the third trimester of gestation. Women were selected by the non probability convenient sampling. Information regarding demography and reproductive parameters like number of pregnancies was collected on a predesigned questionnaire. The knowledge about TT vaccination, source of information, number of TT doses received and different reasons for not vaccinated were asked from women. All the data gathered was entered and analyzed by SPSS V 16.

**RESULTS:** Out of 307 women interviewed, 193(62.9%) women were vaccinated. Of these 124(40.4%) had received TT2, this percentage decreases with TT3 and onwards injections of TT vaccination. Majority of respondents 202 (65.7%) had knowledge about the importance of TT vaccination. One hundred ninety two (62.5%) respondents receive the information regarding the importance of TT vaccination by health care staff. Very few respondents reported the other sources of information like media, relatives/ friends and neighbors.

**CONCLUSION:** The coverage of TT vaccination is below the WHO universal recommendations. The lack of knowledge is the main reason for it.

**KEY WORDS:** TT vaccination, Knowledge, Coverage, Reproductive age

### INTRODUCTION:

Tetanus is a vaccine preventable, non-communicable infectious disease caused by clostridium tetani.<sup>1</sup> Globally every year 309,000 deaths occur due to tetanus<sup>2</sup> Of particular concern is maternal and neonatal tetanus (MNT) as it is estimated that every year worldwide 5% of maternal deaths occur due to tetanus and 14% of all neonates die due to MNT.<sup>3</sup>

Tetanus can occur during pregnancy or within 6 weeks after termination of pregnancy. Women who deliver under unhygienic conditions and with low TT vaccination immunization are at risk to develop tetanus. Newborn babies of those mothers are also prone to develop neonatal tetanus (NNT).

Pakistan is one of the 8 high burden countries which account for 73% of neonatal tetanus deaths. In Pakistan 22,000 neonatal deaths occur every year due to MNT.<sup>3</sup>

Maternal vaccination with TT is recommended and practiced worldwide and has resulted in decline the incidence of maternal and neonatal tetanus.<sup>4</sup>

In Pakistan expanded Programm of immunization (EPI) routinely recommends two doses of TT vaccination during pregnancy. The percentage of women receiving two doses of TT vaccination was 56% in 2002, 57% in 2003,<sup>5</sup> 45% in 2004,<sup>6</sup> and 53% in 2006.<sup>7</sup> Despite the considerable resources being invested into the routine EPI Programm in Pakistan, there is no or very slow improvement in TT coverage among the pregnant women, more ever there are wide variation in the TT vaccination coverage from one province to another Province and from one district to another district in the same province of Pakistan.<sup>8,9</sup>

Little work has been done to discover the reasons for low TT vaccination coverage among

pregnant women. Considering these facts this study was conducted at Out Patient Department of Isra University Hospital to find out the TT vaccination coverage in the pregnant women and to assess the factors likely to be associated with TT vaccination coverage in women of reproductive age.

#### METHODOLOGY:

This was a cross sectional survey conducted in the Obstetrics and Gynecology Out Patient Department (OPD) of Isra University for the period of three months from March 2008 to June 2008.

Isra University is one of the big private sector tertiary care teaching hospital which caters patient from Hyderabad city and from nearby villages. Around 800 to 1000 patients visits the OPD with gynecological and obstetrical problems, out of these 55% of women came for antenatal care. The population frame for present study comprise of all those women who came for antenatal care in the third trimester of gestation. Women were selected by the non probability convenient sampling.

After taking informed consent women were interviewed and information regarding demography and reproductive parameters like number of pregnancies was collected on a predesigned questionnaire.

The knowledge about TT vaccination, source of information, number of TT doses received and different reasons for not vaccinated were also asked from women.

All the data gathered was entered and analyzed by SPSS V 16.

#### RESULTS:

Of 307 women interviewed 192(62.5%) belongs to urban area and 115(37.5%) to rural areas. Overwhelmingly majority 231(75.2%) were illiterate, very few 22(7.2%) reported the 10 years of education. The number of women with first pregnancy was 22(7.2%) while 124(40.4%) and 93(30.3%) were second and third gravida respectively. As shown in table I.

Overall 193(62.9%) women were vaccinated out of these 124(40.4%) had received TT2, this percentage decreases with TT3 and onwards.

Majority of respondents 202 (65.7%) had knowledge about the importance of TT vaccination.

One hundred ninety two (62.5%) respondents receive the information regarding the importance of TT vaccination by health care staff. Very few respondents reported the other sources of information like media, relatives/ friends and neighbors.

Ninety seven (31.6%) women receive TT vaccination at Talika Hospital while

**TABLE: I.**  
**DEMOGRAPHIC AND REPRODUCTIVE CHARACTERISTICS. (N= 307)**

Variable	Number	Percentage
<b>Locality</b>		
Urban	192	62.5
Rural	115	37.5
<b>Gravidity</b>		
Primi Gravida	22	7.2
Second Gravida	124	40.4
Third Gravida	93	30.3
Fourth Gravida	39	12.7
Fifth Gravida	4	1.3
Gravida more than five	25	8.1
<b>Education</b>		
No formal education	231	75.2
5 years of education	33	10.7
8 years of education	9	2.9
10 years of education	22	7.2
≥ 10 years of education	12	3.9
<b>Number of antenatal visits</b>		
First visits	130	42.3
Second visits	129	42
Third visits	30	9.8
fourth visits	10	3.3
Fifth visits	8	2.6

Results are expressed as number and percentages

25(8.1%) 24 (7.8%) and 22(7.2%) were vaccinated at Basic Health Unit, at home by Vaccinator and at private clinic respectively.

The different reasons for not being vaccinated were shown in table II. Most common reason was unawareness about the importance of TT vaccination.

#### DISCUSSION:

The world Health Organization recommends that 90% of women in high risk areas should be vaccinated against Tetanus,<sup>10</sup> as achieving and maintenance of high level of maternal immunization with TT vaccination is the corner stone of control strategies for maternal-neonatal tetanus (NNT).

The present study was undertaken to assess the coverage of TT vaccination and to understand the reasons for low coverage. The TT vaccination coverage of pregnant women in present study was 63% which is low as reported from the province of Peshawar<sup>9</sup> and Punjab<sup>11</sup> but high then the reported coverage of vaccine nationally<sup>7</sup> and provincially<sup>12, 13</sup>

The reason for high coverage may be the locality as 63% of women in present study belong to urban areas. It is also shown in the literature that population from urban areas have more coverage of TT vaccination as compared to residents from rural areas.<sup>7, 9</sup>

Though the coverage of TT2 vaccine was high in the pregnant women studied, but the frequency of women having TT3 and TT4 was very low and none of them were having complete five series of injections which is very low to the WHO expected level of vaccination of 100% of pregnant women.<sup>3</sup>

The present study reveals 231(75.2%) of women had no formal education, this may be the reason for low coverage of TT vaccination. It is reported in the literature that coverage of TT vaccination increases with the level of education.<sup>7</sup>

The proper knowledge about vaccination increases the likelihood of increase vaccination acceptance.<sup>4</sup> In present study only 62% of women have knowledge about the effectiveness of vaccination. These

findings are consistent with literature.<sup>9, 14</sup> The utilization of health care facility for antenatal care has positive impact on the TT vaccination coverage. The visit of women to the health care provider for the antenatal care not only increases the knowledge of women regarding TT vaccination but also helps in change of behavior regarding vaccination. The results of our study was consistent with the studies conducted in the central Africa and India. These studies demonstrated that antenatal care visits and knowledge about vaccination were important factors for increase coverage of vaccination.<sup>9, 15</sup>

The visit of Lady Health Worker/ Lady health visitors (LHW/LHV) has a positive impact on vaccination status. The LHW/ LHV impart health education, vaccinates female and encourage female to have antenatal visits

One hundred sixty nine (55%) women in present study received knowledge about vaccination from LHW/ LHV. These findings showed that LHW/LHV is the common information disseminating source similar to literature.<sup>4, 5, 9, 13</sup>

The most common 79(25.7%) reason for inadequate TT vaccination reported by women was that they were not aware of the importance of TT vaccination; other reasons were the fear of abortion/ fear of side effects and non availability of vaccine. These results are consistent with literature.<sup>11</sup>

#### CONCLUSION:

It is concluded that the TT vaccination coverage in reproductive age group women is below the WHO recommendations. The lack of awareness is the major reason for it. These findings are of public health concern and require immediate attention. The public health awareness programs should be launched to increase the awareness and acceptance rate for TT vaccination.

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**TABLE: II.**  
**KNOWLEDGE, SOURCE OF INFORMATION AND COVERAGE OF TT VACCINATION.**  
(N= 307)

Variables	Number	Percentage
<b>Did you have knowledge about the importance of TT vaccination?</b>		
Yes	202	65.7
No	105	34.3
<b>Who provide you the information about the TT Vaccination?</b>		
Lady health worker	102	33.2
Lady health visitor	67	21.8
Lady doctor	23	7.5
Media	11	3.6
Relatives/friends	13	4.2
Others	4	1.3
<b>Did you receive TT vaccination?</b>		
Yes	193	62.9
No	114	37.1
<b>From where did you receive TT vaccination?</b>		
Talika Hospital	97	31.6
Basic health unit	25	8.1
At home by vaccinator	24	7.8
Private Clinic	22	7.2
District hospital	19	6.2
Rural health centre	6	2.0
<b>How many TT vaccination have you received?</b>		
TT1	53	17.3
TT2	124	40.4
TT3	13	4.2
TT4	3	1.0
TT5	0	0
<b>Reasons for not receiving TT vaccination</b>		
Not aware about importance of TT vaccine	79	25.7
Fear of abortion	14	4.6
Fear of side effects	10	3.3
Non availability of vaccine	9	2.9
Husband/ In-laws did not allow	2	0.7

Results are expressed as number and percentages.

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