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Cord Care Practices Among Neonatal Tetanus Cases In the Community

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Abstract: *Cord care practice is one of the most important practice for prevention ofNeonatal Tetanus including other practices are safe delivery, mother's immunization, early diagnosis and management of Neonatal Tetanus.In 2008, Bangladesh achieved "Maternal and Neonatal Tetanus" (MNT) elimination,but still cases of neonatal tetanus is being reported frequently. This study aims to assess the cord care practices among the neonatal tetanus cases and to assess further scopes of interventionto reduce its incidence.A cross-sectional descriptive type of study carried out atInfectious Disease Hospital(IDH), Dhaka duringJanuary 2004 to October 2005 A total number of sixty-threeneonatal tetanus caseswere assessed by interviewing mothers and examining cases. Among the cases of NNT 96% was home deliveries, 97% deliveries were by unskilled birth attendants, 78% of the mothers were not immunized against tetanus,77% of cases the umbilical cords were cut by unsterilized instruments, only 12% by attained sterile methods to tie the cord, 54% cases used nothing to the umbilical cord, but37% cases used the traditional unhealthy and unsterile methods to keep the cord clean.The respondents were both from the urban and rural settings, 38% and 62% respectively. The mean age of the neonate on the day of admission was approximately 10 days withcommonly reported symptoms of developingdifficulty in sucking (98%), convulsion (62%) and risussardonicus(46%). Only 35% of symptomatic cases were treated by doctors at the hospital with only discharge (38%) and with inflammation additional to discharge (35%) at the site of the umbilical stump and rest 65% were treated and referred by other than doctors. Establishing long-term elimination of neonatal tetanus requires the health care system to be yet more scrutinized to effectively encourage institutional delivery, improving immunization status of the mothers and to detect vulnerable households and mothers, so that, the unhealthy delivery and cord care practices can be prevented as a result, reduce exposure to tetanus.*

Key Words: *Neonatal tetanus, Cord care, Mother of new born*

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I. Introduction

Tetanus in the first 28 days of life (neonatal tetanus) was long recognised as one of the important causes of neonatal deaths in developing countries.[1] Newborns of non-immunised mothers or newborns, who have not attained passive immunity from the immunised mother are at high risk of developing neonatal tetanus (NNT). It is estimated that NNT kills more than 200,000 newborns each year; almost all these deaths occur in countries with poor resource settings.[2] In Bangladesh, this disease takes nearly 12,000 newborn baby's life each year.[3]Neonatal tetanus is associated with unsterile deliveries which takes place in home and unsterile umbilical cord care practices, and newborns of mothers with antitoxin levels not sufficient to protect the new born by transplacental transfer of maternal antibody.[1] It usually occurs through infection of the unhealed umbilical stump, particularly when the stump is cut with a non-sterile instrument.[2] Eliminating NNT requires active

immunisation of the pregnant mother with tetanus toxoid vaccine and ensuring presence of skilled attendants at delivery[4], promoting clean delivery and cord-care practices, and strengthening disease surveillance and case investigation.[2] Bangladesh achieved MNT elimination status in 2008[5] But this disease is one of the most underreported diseases, since many of the cases and deaths occur at home, which have not been registered.It tends to occur in areas with poor access to health care and often remains silent within the community [1]and the cases which reach a health facility often doesn't undergo registration by the health staffs. Therefore the true burden of the disease is still imprecise. This study aims to observe the reported cases of NNT and the cord care practices among them.

II. Methodology

A cross-sectional descriptive type of study carried out at Infectious Disease Hospital (IDH), Dhaka during January 2004 to October 2005. A total number of sixty three neonatal tetanus cases were assessed by interviewing mothers and examining cases. Information obtained included, residence and occupation of the parents, age and sex of the index child, TT vaccination history of the mother, reasons behind not taking the vaccine, place of delivery and delivery attendant, instruments used to cut and tie the umbilical cord, substances used for cord care, personnel from whominitial treatment taken after developing the symptoms, sign and symptoms of the disease, complications arose during treatment, hospital stay duration and outcome of the treatment.Analyses were performed using SPSS version 16.0. Results were expressed as rates, proportions and diagrams.

III. Results

The participants of the study were 63 mothers who referred to IDHwith diagnosed cases of tetanus of their children aged below 29 days. The mean age of the children was approximately 10 days. Among the participants, 24 mothers (38.1%) were from urban and 39 mothers (61.9%) were from rural residence. There were 44 male (69.8%) and 19 female (30.2%) babies.

Table 1: Distribution of participants according to reasons behind not taking the TT vaccine

	Frequency	Percentage
Afraid of Injection	10	15.9
EPI center far away	5	7.9
EPI visitor did not visit	2	3.2
Not aware of vaccination	16	25.4
Other	16	25.4

Among all the mothers only 14 mothers (22.2%) have given the history of taking TT vaccine. Reasons behind not taking the vaccine has been shown in **Table 1** which clearly indicates the poor knowledge about the importance of this vaccination among the mothers.

Table 2: Distribution of participants as per place of delivery

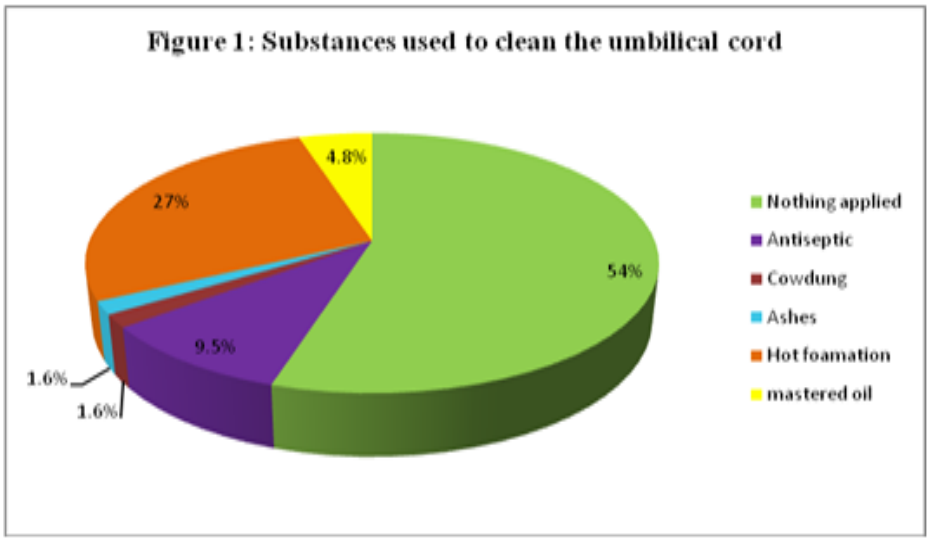
Place of Delivery	**Frequency**	**Percentage**
Hospital	2	3.2
Home	61	96.8
Distribution of participants as per delivery attendant		
Doctor	1	1.6
Nurse	1	1.6
Dai	55	87.3
family members	6	9.5

Among all the cases, only 2 of them had hospital delivery and all the rest had home delivery. **Table 2** shows the place of delivery and delivery attendant which reflects these deliveries mostly done by unskilled persons.

Table 3: Instruments used in cutting the umbilical cord

	Frequency	**Percentage**
Unsterilized blade	45	71.4
Unsterilized knife	2	3.2
Sterilized instrument	12	19.0
Boiled new blade	2	3.2
Instruments used in tying the umbilical cord		
	Frequency	**Percentage**
Unsterilized thread	51	81.0
Sterilized thread	6	9.5
Unsterilized cloth	3	4.8
Sterile silk	2	3.2

Table 3 shows the instruments used in cutting and tying the umbilical cord. Here it is visible that, only in 22% cases, sterile method is used to cut the cord. In 77% of cases the umbilical cord was cut by unsterilized instruments. And to tie the cord only 12% attained sterile method.



The Figure 1 demonstrates that in 54% of cases, nothing is used to the umbilical cord after the cut. Nearly 37% mothers reported to use the traditional unhealthy and unsterile methods to keep the cord clean which includes cow dung (1.6%), ashes (1.6%), hot formation (27%) and mastered oil (4.8%) of cases.

Table 4: Distribution of respondents by whom given initial treatment given

	Frequency	Percentage
Qualified doctor	22	34.9
Village quacks	8	12.7
Kabiraj	19	30.2
Homeopathy	2	3.2

Table 4 shows the personnel from whom the initial treatment has been availed after developing the symptoms. Only 35% of the participants approached to a qualified doctor on developing the symptoms, whereas all the rest of them followed the traditional form of treatment.

Table 5: Clinical findings on admission to the hospital

Age	7 days or below	21	33.3
	8 to 14 days	31	49.2
	15 to 21 days	7	11.1
	22 days or more	4	6.3
Condition of umbilical stump	Only discharge	24	38.1
	Inflamed and discharge	22	34.9
	Dried	15	23.8
	Normal	2	3.2
Symptoms	Difficulty in sucking	62	98.41
	Increased crying	43	68.25
	Apathy	24	38.09
	Convulsion	39	61.9
	Risussardonicus	29	46.03
	Fever	24	38.09
Signs	Spasms on touch	51	80.95
	Lock jaw	52	82.54
	Neck rigidity	31	49.21
	Abdominal rigidity	45	71.43
	Apnoea	15	23.81
	Opisthotonus	38	60.32
	Cyanosis	12	19.05
Duration of hospital stay	7 days or below	20	31.7
	8 to 14 days	10	15.9
	15 to 21 days	23	36.5
	22 to 28 days	6	9.5
	29 days or more	2	3.2

Table 5 represents the clinical findings at the time of admission in the hospital. Approximately half of the patients have brought to the hospital during the second week of their age. Also, abig portion (33.3%) developed the disease and brought to hospital during their first week of life. Most of the patients (38.1%) came with a discharging umbilical stump; nearly 35% showed inflamedumbilical stump with discharge, nearly 28% of the cases presented dried umbilicus and 2 cases found to have normal umbilicus. As predicted, 98% of the cases gave history of developing difficulty in sucking, as the early symptom.Nearly in 68% cases the baby said to be cried more intensely than normal, whereas 38% cases showed apathy. History of convulsion recorded nearly in 62% of cases, risussardonicus in 46% and fever in 38% of cases. Recorded signs of the disease were spasms on touch in almost 81% of patients, lock jaw in almost 82% of patients, abdominal rigidity in 71% of patients, opisthotonus in almost 60% of patients. Other symptoms such as, neck rigidity, apnoea and cyanosis were found in nearly 49%, 23% and 19% of the patients consecutively.The average hospital stay of the patients was 13 days. Almost 32% of the patients had to stay one week or less, 36.5% patients needed to stay more than two weeks, 3.2% patients had to stay even more than a month.

IV. Discussion

It has been seen from the neonatal tetanus cases of this study that, in most cases the mothers were not immunized, the deliveries took place in home by unskilled birth attendants, the cord was cut and tied by unsterile means and application of hazardous substance to the cord was practiced. The study shows, here 77.8% of the mothers failed to obtain vaccine of tetanus toxoid antenatal, which is also found in a study done in Nigeria where, 77.4% of mothers of the babies with neonatal tetanus were not immunized against tetanus [6]. It has been observed that, most NNT cases occurred among babies born in homes (96.8%) which was nearly similar to the study done in Kenya where they found 98% of NNT cases occurred in home delivered babies [7]. Even previous studies in Bangladesh also showed that, children who got infected with neonatal tetanus all of them occurred among home delivered newborns [8]. Only 23% of the mothers recalled using sterilized instrument to cut the umbilical cord. Raza et al. in his study in Karachi, Pakistan, recorded that, in 16% of the NNT cases, the cord was cut with old blade and in 15.2% cases kitchen scissors were used [9]. In this study it has been recorded, no cord clamp had been usedto tie the cord after cutting, which is basically a institutional practice. And only 12% attained sterile method to tie the cord.Unsterile thread was used in 81% of cases, the study of Raza et al. we found similar result, where in 87.4% of cases the cord was tied with thread[9].In this study, we found that, use of antiseptic in the cord was prevalent in nearly 10% of cases, where as in Bihar, India, antiseptic cord care prevalence was 49.7%[10]. Though, 54% of the cases in this study gave history of using nothing in the cord which is a WHO recommended practice.[11]We found that, traditional practices are common in cord care practices. Applying mastered oil(4.8%), ashes(1.6%), cow dung(1.6%) on the umbilical cord, have been reported by the mothers. In rural Pakistan, ghee, clarified butter used for cooking, has been reportedly used for umbilical cord care purposes with other substances such as mustard oil and surma[12]. It has been recorded that, approximately 69% of the tetanus infected children were male and 30% of the children were female which corresponds to the study which was carried out in India where 66% of the neonatal tetanus cases are found in male children[10]. In Kenya, Fredrick et. Al found that, 62.4% of the neonatal tetanus infected children were male[7].

V. Conclusion

As has been shown, inadequate maternal immunization, unsterile delivery and unsterile umbilical cord care practices are playing vital roles in developing neonatal tetanus in our study.More disseminated and extensive training and education programme of the root level health care provider, traditional birth attendants and the pregnant parents and family members are required to be ensured. To establish long-term elimination of neonatal tetanus, the health care system needs further strengthening to encourage institutional delivery effectively and identify all vulnerable mothers who are susceptible to experience unsterile delivery and unsterile cord care practices of their newborn thus proper preventive measures can be undertaken.

Reference

[1]. Roper MH, Vandelaer JH, Gasse FL. Maternal and neonatal tetanus. Lancet, 2007; 370: 1947-59.
[2]. WHO. Tetanus.Expanded programme on immunization. 2012
[3]. UNICEF. Improving Equity by Eliminating Maternal and Neonatal Tetanus. 2004.
[4]. Abuwa P. N. C., Alikor E. A. D., Gbaraba P. V., et al. Epidemiology of neonatal tetanus in Rivers State of Nigeria (1997). *J Epidemiol Commun Health* 51:336
[5]. The Ittefaq. . UN: Tetanus eliminated in Bangladesh. 2013.
[6]. Anita AD,Torimiro SEA &Ako-Nai KA. Prognostic factors in neonatal tetanus.
[7]. Tropical Medicine and International Health, 1998, 3(1): 9-13

[8]. Ibinda F, Bauni E, Kariuki SM, Fegan G, Lewa J, Mwikamba M, et al. Incidence and Risk Factors for Neonatal Tetanus in Admissions toKilifi County Hospital, Kenya. PLoS ONE, 2015; 10(4): e0122606. doi:10.1371/journal.pone.0122606

[9]. W. Gary Hlady, MD, MS, John V Bennett, MD, Aztz R Samadi MD, MPH, Jahanara Begum, MBBS, MPH, Abdul Hafez, MBBS, Aminul I. Tarafdar, MBBS, MPH, and John R. Boring, PhD. mNeonatal Tetanus in Rural Bangladesh: Risk Factors and Toxoid Efcacy. American Joumal of Public Health, October, 1992. 82(10): 1365-69

[10]. Raza SA, Akhtar S, Avan BI, Hamza H, Rahbar MH. A matched case-control study of risk factors for neonatal tetanus in Karachi, Pakistan. J Postgrad Med 2004 December; 50(4):347-352

[11]. Dandona R, Kochar PS, Kumar GA, et al. Use of antiseptic for cord care and its association with neonatal mortality in a population-based assessment in Bihar State, India. BMJ Open 2017;7: e012436. doi:10.1136/ bmjopen-2016-012436.

[12]. World Health Organization. United Nations Population Fund, United Nations International Children's Emergency Fund, et al. Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice. Geneva: World Health Organization, 2009.

[13]. Bennett J, Ma C, Traverso H, Agha SB, Boring J. Neonatal tetanus associated with topical umbilical ghee: covert role of cow dung. Int J Epidemiol 1999;28:1172-5.(20).

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