

Neonatal Tetanus in a Nomadic Population in South India: A Clinicosocial Case Study

Sir,

Although unrestricted by age group, tetanus has historically been particularly fatal for neonates and postnatal mothers. Before the introduction of clean delivery practices and antenatal immunization, tetanus was a major cause of mortality within 1 month of life worldwide. India was declared free of maternal and neonatal tetanus (MNT) on May 15, 2015, by the WHO.^[1] It was achieved through increased coverage of antenatal tetanus immunization, promotion of institutional deliveries, availability of delivery kit for safe umbilical cord practices, and a high political commitment. However, these services have not been completely utilized by the nomadic communities in India. The nomadic population of India stood at an estimated one million in 1982.^[2] They continue to be a neglected population with limited access to education, mainstream opportunities, and health care. Only in the recent times have policy makers started focusing on the erstwhile invisible population with the Renke and Idate commissions releasing reports on their statistics and addressing their problems.^[3] An infant death review was conducted to assess the clinical, social, and epidemiological details of the case.

A 3-day-old female baby was admitted to the pediatric emergency department of a tertiary care center in Puducherry on December 2, 2018, with complaints of not breastfeeding, fever, and generalized spasms. On examination, the baby was found to be in a state of shock with seizures, opisthotonos posturing, and tonic spasms to stimuli. She was clinically diagnosed to be a case of neonatal tetanus (NT) and started on immunoglobulin therapy, antibiotics, and supportive management in the neonatal intensive care unit. After a month of treatment, owing to the dismal prognosis of the child, the parents took her home against medical advice, where she died the following day.

A comprehensive case history was taken through a semi-structured interview from the mother, village health nurse (VHN – equivalent to auxiliary nurse midwife) of the area, as well as the medical officer of the local primary health center (PHC), and clinical course was followed up through the case records. The parents of the child belonged to a nomadic population in Tamil Nadu. Two older children, both males, were delivered institutionally in Tamil Nadu and were apparently healthy. The spacing between the previous pregnancy and the current one was 3 years. The mother had not been booked or registered in any health facility during the course of this pregnancy. In the 7th month of gestation, she had been identified by the VHN during a festival and given a stat dose of tetanus toxoid injection and given instructions

for follow-up. Barring a single visit for blood investigations, there were no further contacts with the health system although there was no recorded change of residence in this period. No ultrasound scans were performed. The VHN failed to track her with home visits. The baby was delivered at home by the maternal grandmother. The cord was cut using an unsterile pair of scissors. A burnt cotton wick and ash were applied to the umbilical stump to arrest bleeding. The baby was not breastfed on the first 2 days. No prelacteal feed was given. On the first postnatal day, the mother went to work in a poultry farm and took the baby along with her. In the afternoon of the second postnatal day, the baby developed fever, for which they consulted the local PHC. It was from there that she was referred to the tertiary care center. The concerned VHN was not aware about the delivery. Hence, no postnatal visits were done.

Social and epidemiological details were assessed through unstructured interviews and field notes during interactions with the Niece of the baby's mother and neighbors. The parents were out at work throughout the day and did not agree to meet/talk after returning late.

Family lived in a thatched kutchra hut without access to adequate lighting, ventilation, electricity, or safe water. Open air defecation was practiced. Personal hygiene was poor. A joint family system was followed. They have long working hours extending from dawn to nightfall every day. Their predominant occupation was as manual agricultural laborers, associated with sugarcane harvesting. Every few months, they would relocate to adjacent districts according to the labor demands. All members of the family went to the workplace together and came back after purchasing food with the daily wages; hence, money was not saved. The family attended local festivals, but interaction with persons outside the community remained limited. Home deliveries were the norm, conducted by older female members of the community. Applying ash after cord cutting is a prevailing cultural practice believed to make the wound healthy and colostrum is believed to be produced from impure menstrual blood and hence withheld. Ritual fasting was done after childbirth wherein both the mother and the baby are not allowed to take oral feeds. The baby and mother were also not allowed to bathe on those 2 days. They owned no land, no official documents, and were unaware of any entitled services including Integrated Child Development Services Scheme. Persons from their community never went to school and could not tell their ages. Some of the male members of the family had some basic numeracy skills alone. Only one of the four children present at the time of visit had been delivered in a hospital and carried a Bacillus Calmette

Guerin (BCG) scar. They have occasional contact with the public health-care system in case of emergencies, but largely stick to their own knowledge of herbal medicines. There was a definitive lack of perceived need for educating oneself or seeking external aid, including nonacceptance of the routine health-care system, coupled with a sense of fear regarding the possibility of eviction from the land or intervention by officials if the general community came to know of their existence. The distance of the settlement from the nearest health facility (PHC) was also a problem. It would take them 30 min of travel by bus and around 2 h by foot; hence, visits were usually not preferred unless an emergency.

Tamil Nadu is one of the states in India with good health indicators and a robust health-care system.^[4] A case of MNT represents a failure at multiple levels of the public health system – the routine immunization program, antenatal care, and ensuring clean and safe birth practices.^[5] Incidence of NT within the state suggests lack of equitable access to health care to the nomadic population. The health-care providers were dismissive of their needs, stemming from two reasons. One was the practical difficulty of getting in touch with them due to their erratic lifestyle and work timings. Tracking and follow up by health workers was hindered by their nomadic way of life. The second, more importantly, was the poignant stigmata that those groups of people would not come forward to seek care even when offered. Hence, the motivation of health-care providers to follow-up on these cases seemed low. In effect, the population remained invisible from the purview of public health-care efforts, even as the indicators of the whole region were good.

The investigation reveals a multifaceted problem with contributing factors arising from both the community and the health system [Figure 1]. This can be dealt with only through a comprehensive health policy focusing on the nomadic population and supplemented by political action. In order to sustain the elimination status of MNT, it is imperative that coverage of vaccination is ensured in high-risk pockets. It must also be kept in mind that cord cutting is originally a ritual inseparable from myth, like the widespread belief that colostrum is harmful which further leads to early mother–child separation. Additional efforts to neutralize the effects of such

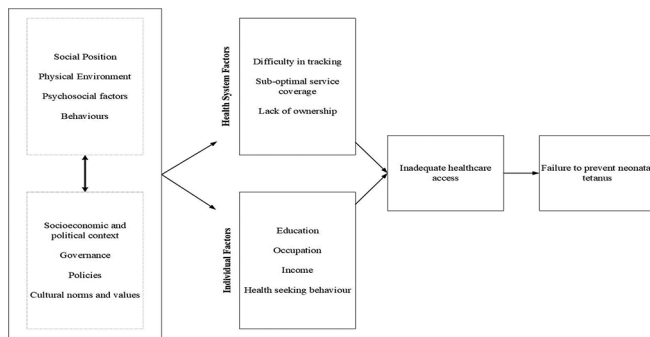


Figure 1: Framework of social determinants of neonatal tetanus

deep-rooted beliefs and rituals would be necessary to ensure safe peripartum practices.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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