Public Health (2005) **119**, 655–658

PUBLIC HEALTH
JOURNAL OF THE ROYAL INSTITUTE OF PUBLIC HEALTH
www.elsevierhealth.com/journals/pubh

SHORT COMMUNICATION

Assessment of injection-related practices in a tribal community of Andaman and Nicobar Islands, India

M.V. Murhekar, R.C. Rao, S.R. Ghosal, S.C. Sehgal*

Regional Medical Research Centre, Indian Council of Medical Research, Post Bag 13, Port Blair 744 101, Andaman and Nicobar Islands, India

Accepted 17 July 2004
Available online 20 December 2004

KEYWORDS
Injection practices;
Tribes;
Nicobarese;
Andaman and Nicobar Islands

Summary
A survey to assess injection related practices carried out among the Nicobarese, a mongoloid tribe of Andaman and Nicobar Islands, India. The survey was carried out using the rapid assessment and response guide of Safe Injection Global Network of the World Health Organization and included review of randomly selected prescriptions of patients attending outpatient clinic of district hospital, interview and observation of injection providers in the district hospital and sub-centres and interview of the general population. The findings of the survey showed that 18.8% of prescriptions included at least one injection. The per capita injection rate was 3 per year. Majority of injections were administered with disposable syringe and needle and in hospital setting. All the injection providers were aware about possibility of HIV transmission through unsafe injections. However, the awareness among the general population was low. More than half of the individuals had preference to injections. It is suggested that remedial measures, such as education of prescribers to reduce the number of injections to a bare minimum, maintaining regular supply of disposable injection equipments, provision of adequate sharps containers with safe disposal facilities and community education be undertaken to avoid future spread of blood-borne pathogens.

The Andaman and Nicobar Islands, Union Territory of India, are home to six primitive tribes (Great Andamanese, Onges, Jarawas and Sentinelese of Negrito race, and Nicobarese and Shompens of Mongoloid race), constituting about 10% of the total population of the islands. The Nicobarese constitute more than 98% of the tribal population. Sero-epidemiological studies carried out among these tribes have revealed that hepatitis B virus (HBV) infection is highly endemic, with hepatitis B surface antigen (HBsAg) rates ranging between 23% among the Nicobarese and 37.1% in the Shompens.[1] The infection was found to be transmitted by both vertical and horizontal routes.[2] The prevalence of human immunodeficiency virus

* Corresponding author. Tel.: +91 3192 251043/251158; fax: +91 3192 251163.
E-mail address: pblicmr@sancharnet.in (S.C. Sehgal).

0033-3506/$ - see front matter © 2004 The Royal Institute of Public Health. Published by Elsevier Ltd. All rights reserved.
doi:10.1016/j.puhe.2004.07.010

(HIV) and hepatitis C virus (HCV) were found to be lower (unpublished data).

Numerous studies have shown that unsafe injections contribute to the transmission of blood-borne pathogens such as HIV, HBV and HCV.[3-7] In view of the high endemicity of HBV infection among the tribes of these islands, we carried out a survey to assess the injection-related practices among the Nicobarese. The objectives of the survey were to determine the frequency and type of injections, to identify who administers the injections, and to evaluate safety of the injections.

The survey was carried out in Car Nicobar Island, which is inhabited exclusively by the Nicobarese. The Nicobarese living on Car Nicobar Island form the largest tribal population living in any single island of the territory. The total population of this island is about 20,000, distributed in 15 villages. Medical care on this island is provided through one district hospital and five subcentres. Injection-related practices were assessed following the guidelines of the World Health Organization.[8] Briefly, assessment included: (i) review of 250 randomly selected prescriptions of patients attending the outpatient clinic of the district hospital over a 1-week period; (ii) interview and observation of 14 injection providers in the district hospital and subcentres; and (iii) interview of the general population to estimate the frequency of injections. The survey was carried out according to WHO-EPI 30 cluster methodology[9] covering all 15 villages on the island. Seven individuals within each cluster were selected at random and were included in the study after obtaining their consent. For children younger than 10 years of age, their parents were interviewed. Information regarding injections received in the previous 3 months, including the number and type of injections received, the provider of the most recent injection, and the safety of the most recent injection, including data on type and source of syringes used, was collected using a structured questionnaire. Information about the most recent injection was also collected from individuals who received injections more than 3 months previously. In addition, each individual's preference for injection/oral medicine and reasons thereof, and their knowledge about diseases transmitted by unsafe injections were also collected. The data were analysed to assess the use of injections, injection safety and various determinants of injection practices.

The findings of the survey are summarized in Table 1. Forty-seven of the 250 prescriptions had at least one injection, with an OT8 indicator (proportion of prescriptions with at least one injection, excluding immunizations) of 18.8/100 prescriptions. Of the 210 individuals surveyed, 46 (21.9, 95% confidence intervals 14.7–31.2) reported that they had received at least one injection in the previous 3 months. A total of 160 injections were received by 46 individuals who reported receiving an injection in the previous 3 months, with an average of 3.0 injections/person/year.

All the injection providers used new disposable syringes and needles for administering the injections. None of the health facilities had sharps boxes, and they used sundry containers for discarding used needles. The providers reported that they buried the used needles and syringes.

The majority (93.5%) of individuals who had received an injection in the previous 3 months recalled that their most recent injection was with a new disposable syringe and needle which was taken out from the sealed packet, whereas two individuals (4.3%) reported that their most recent injection was with a glass syringe and needle which were taken from a container of water. One person could not recall the source of injection equipment. Of the 164 individuals who had not received any injections in the previous 3 months, 121 recalled the details of injections received earlier. All these individuals reported that their injection was administered by a nurse/auxillary nurse midwife(ANM); 64.5 and 35.5% of the individuals reported that their most recent injection was administered with a glass syringe and needle, and a disposable syringe and needle, respectively.

All the providers were aware of the possibility of transmission of HIV infection through unsafe injections, but none of them knew that HCV could be transmitted through injections. All the providers reported availability of sufficient injection equipment in their stock. Awareness about the possibility of transmission of HIV, HBV and HCV was generally lower among the individuals from the general population. All the providers had received at least two doses of hepatitis B vaccination. More than half of the respondents (54.8%) from the general population preferred an injection to oral medication when they are sick with fever.

Unsafe injections are common in many developing countries; it is estimated that about 50% of injections given in these areas are unsafe.[3] Studies carried in India have estimated that 45–64% of the injections administered are unsafe.[10,11] The findings of the present study, however, showed that the majority of injections in this tribal community are administered with disposable syringes and needles by trained medical providers in hospital settings. In a review of