

## BIO-DATA

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**Educational qualifications:** M.B.B.S., M.D. (Social and Preventive Medicine)  
**Present and previous employment:**

Position held	From-To	Institution
Deputy Director (Epidemiology)	July 2004 –till date	National Institute of Epidemiology, ICMR, Chennai, India
Deputy Director (Epidemiology)	Feb. 2002- June 2004	Regional Medical Research Centre, ICMR, Port Blair, Andaman and Nicobar Islands, India
Assistant Director (Epidemiology)	Dec. 1998-Jan. 2002	Regional Medical Research Centre, ICMR, Port Blair, Andaman and Nicobar Islands, India
Senior Research Officer	Dec. 1993- Nov. 1998	Regional Medical Research Centre, ICMR, Port Blair, Andaman and Nicobar Islands, India
Lecturer	Feb. 1993- Dec. 1993	Govt. Medical College, Nagpur, India

### Brief description of work carried out:

#### At Regional Medical Research Centre (RMRC), ICMR, Port Blair.

The mandate of RMRC, Port Blair is to carry out research on diseases endemic in Andaman and Nicobar islands with special emphasis on health of tribal population of residing in these islands. I worked in following projects:

## **VIRAL HEPATITIS**

### **A. Prevalence of Hepatitis B virus (HBV) infection among the tribes**

Andaman and Nicobar islands are the home of six primitive tribes namely Great Andamanese, Onges, Jarawas, Sentinelese belonging to Negrito race and Shompens and Nicobarese belonging to Mongoloid race. Serological studies carried among the accessible tribes of these islands showed a very high prevalence of hepatitis B infection among them. The HBsAg rates observed among these tribes are the highest reported rates in India.

### **B. Epidemiology of HBV infection**

In order to understand important modes of transmission of the infection and the risk factors associated with the infection, a study was carried out in an island inhabited exclusively by the ethnic tribal population. The results indicated that the HBV infection is being transmitted both perinatal and horizontal modes. Besides, unsafe injections represent an independent risk factor for HBV transmission in this community.

### **C. Prevention and control of hepatitis B infection among the tribes**

Considering the high endemicity of HBV infection among the tribes of these islands, a pilot project of HBV vaccination using indigenously developed vaccine was initiated. The project involved vaccination of all the susceptible tribal population from two villages in Car Nicobar Island and all the primary school children studying in different schools in this island and periodic follow-up of the vaccinees to assess the sero-protection rates.

### **D. Molecular epidemiology of HBV infection**

Hepatitis B virus isolates from different tribes were sequenced to understand the predominant genotype circulating among them. Four tribes, i.e. Andamanese, Onges, Nicobarese and Shompens had genotype D as the predominant genotype, which was closely similar to mainland Indian isolates. On the other hand, HBV among the Jarawas was of genotype C, similar to that of Southeast Asian countries.

### **E. Prevalence of other hepatitis virus infections among the tribes**

Besides, HBV, infection with hepatitis A virus was also found to be highly endemic among all the tribes. HEV infection, however, was common among the two Mongoloid tribes. Different HEV prevalence observed among the Mongoloid and Negrito tribes and the different age-wise pattern of HAV and HEV prevalences suggests different modes of transmission of HEV that is not shared.

Infection with Hepatitis C and D virus were not found to be highly endemic among the tribes.

## **PULMONARY TUBERCULOSIS**

In 1986, an intensified Tuberculosis Control Programme was carried out among the Nicobarese tribe of Car Nicobar Island. The Programme involved BCG vaccination of all the new-borns, INH chemoprophylaxis to all the children for a period of six months, identification of all cases of tuberculosis (paediatric and adult) in the community and treatment of them. A project to assess the impact of the intensified control programme on tuberculosis situation in this island was carried in 2002. The impact was measured by calculating the annual risk of infection (ARI) and by measuring the present prevalence of sputum positive cases in the island. The findings of the study showed a rising trend of tuberculosis situation in the island despite the intensified control programme. ARI has more than doubled over last 14 years and it is necessary to implement RNTCP with DOTS strategy in this island.

## **LEPTOSPIROSIS**

Leptospirosis is the main thrust area of the Centre is Leptospirosis. The disease was occurring in these islands as seasonal outbreaks of febrile illness with haemorrhagic manifestations in post-monsoon period. As the etiology of the disease was not known, it was locally named as Andaman Haemorrhagic Fever (AHF). The Centre investigated one of the outbreaks in 1993-94 and on the basis of serological evidence, leptospiral etiology was established. I was one of the members of the research team, which investigated the outbreak.

Since then various sero-epidemiological studies were carried out to assess the disease endemicity in different population groups namely general population, tribal population, school children etc. To understand the chain of transmission of leptospirosis in these islands, several studies were carried out which included case-control studies to identify important risk factors associated with leptospiral infection, studies in animal and rodent population and different variables pertaining to ecology of these islands.

As the disease occurs in the form of outbreaks during post-monsoon period every year with considerable mortality in these islands and as permanent control measures could not be implemented due to lack of knowledge of the transmission cycle, a trial was carried out to assess the efficacy of doxycycline chemoprophylaxis in reducing the morbidity and mortality due to leptospires.

## **LYMPHATIC FILARIASIS**

Lymphatic filariasis is another area of research of this centre. A study to assess the endemicity of the disease in different islands was carried out. It was found that nocturnally periodic type of filariasis was endemic in Little Andaman, the Southernmost Island of Andaman district and diurnally sub-periodic type in Nancowry group of islands of Nicobar district.

## At National Institute of Epidemiology, Chennai

Working as a faculty for the two year Field Epidemiology Training Programme (FETP)

### PUBLICATIONS

#### Published papers

1. **Murhekar MV**, Kolappan C, Gopi PG, Chakraborty AK, Sehgal SC. Tuberculosis situation among the tribal population of Car Nicobar Island, India, 15 years after an intensified tuberculosis control project followed by implementation of the National Tuberculosis Programme. **Bulletin of the World Health Organization** Nov. **2004;82:836-843**
2. **Murhekar MV**, Murhekar KM, Sehgal SC. Hepatitis B vaccination in a hyper-endemic tribal community from India: assessment after three years. **Vaccine** **2004; 23;399-403**
3. Murhekar KM, **Murhekar MV**. Absence of hemoglobinopathies and G6PD among the Jarawas- a primitive tribe of Andaman and Nicobar islands. **Indian Journal of Human Genetics** **2004; 10; 29-31**
4. Murhekar KM, Hamza A, **Murhekar MV**, Sehgal SC. Transaminase abnormalities in asymptomatic individuals of a tribal community from the Andaman and Nicobar Islands, India. **Trop Gastroenterol**. 2004 Jan-Mar;25(1):55.
5. **Murhekar MV**, Murhekar KM, Sehgal SC. Age-specific prevalence of hepatitis B infection among the Karen in the Andaman and Nicobar Islands, India. **Trop Doctor**. 2004 Apr;34(2):117-8.
6. **Murhekar MV**, Murhekar KM, Sehgal SC. Seroepidemiology of hepatitis B infection among tribal school children in Andaman and Nicobar Islands, India. **Annals of Tropical Pediatrics**. 2004 Mar;24(1):85-8.
7. Arankalle VA, Murhekar KM, Gandhe SS, **Murhekar MV**, Ramdasi AY, Padbidri VS, Sehgal SC. Hepatitis B virus: predominance of genotype D in primitive tribes of the Andaman and Nicobar islands, India (1989-1999). **J General Virology**. 2003 Jul;84(Pt 7):1915-20.
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9. A.N. Shriram, M.V. Murhekar, K.D.Ramaiah and S.C. Sehgal. Prevalence of diurnally sub-periodic filariasis among the Nicobarese in Andaman and Nicobar Islands, India: Effect of age and gender. **Tropical Medicine and International Health** 2002, 7, 949-954
10. **Murhekar MV**, Murhekar KM, Arankalle VA, Sehgal SC. Antibody response of a tribal population immunized with indigenously developed recombinant DNA hepatitis B vaccine (Shanvac-B). **Vaccine** (2002), 20,3431-35

11. **Murhekar MV**, Murhekar KM, Arankalle VA, Sehgal SC Epidemiology of Hepatitis B infection among the Nicobarese- a mongoloid tribe of Andaman and Nicobar Islands, India. **Epidemiology and Infection** (2002) 128, 465-471
12. **Murhekar MV**, Sehgal SC, Murhekar KM, Padbhidri SP, Chitambar SD, Arankalle VA. Changing scenario of HAV and HEV exposure among the primitive tribes of Andaman and Nicobar Islands, India over ten year period: 1989-1999. **Journal of Viral Hepatitis** (2002) 9, 315-321
13. Murhekar KM, **Murhekar MV**, Mukherjee MB, Gorakshakar AC, Surve R, Wadia M, Phanasgaonkar S, Shridevi S, Colah Roshan B, Mohanty D. Red Cell Genetic Abnormalities, b-Globin Gene Haplotypes and ApoB Polymorphism in the Great Andamanese - A Primitive Negrito Tribe of Andaman and Nicobar Islands, India. **Human Biology** 2001,73:739-744
14. **Murhekar MV**, Murhekar KM, Das D, Arankalle VA and Sehgal SC. Prevalence of hepatitis B among the primitive tribes of Andaman and Nicobar islands. **Indian Journal of Medical Research** 2000,111:199-203
15. Sehgal SC, Sugunan AP, **Murhekar MV**, Sharma S and Vijayachari P. Randomized control trial of doxycycline prophylaxis against leptospirosis in an endemic area. **International Journal of Antimicrobial Agents** 2000,13:249-255
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18. **Murhekar MV**, Sugunan AP, Sehgal SC. Present day status of pulmonary tuberculosis in Andamans. **Indian journal of Tuberculosis**.1998, 47:49-50
19. Sugunan AP, **Murhekar MV**, Sehgal SC. Intestinal parasitic infection in Andaman Islands. **Journal of communicable diseases**. 1996, 4,253-259.
20. Shriram AN, Sugunan AP, **Murhekar MV**, Sehgal SC. Little Andaman island: A new focus of infection with nocturnally periodic *Wuchereria bancrofti*. **Indian Journal of Medical Research**. (1996) 104: 166-170.
21. **Murhekar MV**, Kulkarni HR, Zodpey SP, Dehankar AG. Effectiveness of mass neonatal BCG vaccination in the prevention of pulmonary tuberculosis: a case-control study in Nagpur, India. **Tubercle and Lung Disease** (1995) 76, 545-549.
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24. Sharnagat RR, Joshi BM, **Murhekar MV**. Private practitioners vital in remote area. **World Health forum**. (1992) 13: 349 - 350.

**Papers in press:**

1. **Murhekar MV**, Murhekar KM, Arankalle VA and Sehgal SC. Hepatitis Delta virus infection among the tribes of Andaman and Nicobar islands, India, hyper-endemic for hepatitis-B. **Transactions of the Royal Society of Tropical Medicine and Hygiene**
2. **Murhekar MV**, Rao RC, Ghosal SR, Sehgal SC. Assessment of injection related practices in a tribal community of Andaman and Nicobar Islands, India. **Public Health**