PREFACE

During the year attention was given to strengthen quality of research output, linkages with local health authorities and improving quality of work force by recruiting research fellows from various reputed organizations. Besides areas like linkages with national disease control programmes and infrastructure development were emphasized.

Research activities are addressed to issues pertaining to priority areas of diseases prevalent in this region like filariasis, micronutrient deficiency disorders, tribal health and malaria. New research programmes that can contribute towards malaria control in this region have been planned. Research issues are addressed on basic, applied and operational areas intending to develop morbidity markers of infection and develop tools and strategies for control of filariasis. Out of 27 projects, 13 are completed and 22 are extramural that helped resource generation.

Major focus of research in lymphatic filariasis is to develop candidate antigen as immunoprophylactic agent for filariasis. Two filarial antigens, i.e. a glycoprotein and a lipid, isolated from *S.digitata* has shown lack of antibody response in active filarial infection and induced antimicrofilarial immunity against microfilaria in Mastomys. The potential role of recombinent antigens derived from developmental stages of parasite like ALT2, CPI2 conferring antimicro filarial immunity were identified. Using large panel of pro and anti inflammatory molecules, morbidity markers to differentiate various clinical spectrum of filarial disease were developed. To assess exposure level to filarial infection, monitoring tools are being developed using IgG and IgM assay for use in filarial control programme. Innovative strategy for drug delivery during mass drug administration in filariasis control for urban areas has been developed, tested and found successful in improving compliance to the desired level. To address the issues on role of Wolbachia in post DEC reactions, the study indicated that post DEC reactions are independent either to presence and density of microfilaria or to plasma Wolbachia density. The issues on adverse reaction to DEC in the programme are being evaluated.

Malaria is a major health problem in this region. Prevalence of drug resistance profile of parasite like mutations of pfCRT (K76T) and pfmdr1 (N86Y) genes have been shown. The therapeutic efficacy of chloroquine tested in Kalahandi district has shown very high frequency of drug resistance. Insecticide resistance and parasite diversity in three districts were assessed that can help planning control strategy. To facilitate the national programme, four malaria endemic districts were monitored monthly to improve the output.

Micronutrient deficiency disorder and under nutrition is prevalent in this region. State government sponsored project on anaemia among non-school going adolescent girls in three districts indicated very high prevalence (>90%) and identified associated factors of anaemia. Intervention studies addressed to tribal population manifesting anaemia indicated reduction of anaemia in nearly 25% of subjects. Intervention studies amongst tribal population addressed against cholera, intestinal parasitism, scabies and Vit-A deficiency has shown significant reduction of these morbid conditions.

For prevention of sickle cell disease and thalassemia, several tribes were studied in Sundargarh district with interventional approach through IEC and genetic counselling. Social issue like domestic violence has shown association with reproductive health outcome.

Meritorious research fellows awarded with CSIR, UGC or ICMR fellowships were recruited for pursuing Ph.D. Around twenty students sponsored by various universities of the state and outside the state completed their M.Sc. project work. Three students were awarded Ph.D this year. Students undertaking MD course in medical colleges are undertaking their project work under the guidance of our scientists. Medical officers, public health personnel and CDMOs of all the districts were given training on mass drug administration against filariasis as sponsored by local health authority. Sainik school & B.Sc. students of Biotechnology institutes were exposed to modern instrumentation and biotechnology techniques in the Centre.

Many scientists were sent to reputed institutes in India and abroad to acquire new technologies, like pharmacodynamics, microarray techniques and in library science. The scientists have participated and presented their original work in national and international conferences in India and abroad.

The Centre organized several scientific meetings, lectures and workshops during the period. International workshop on methodology in medical research and epidemiology was organized. In collaboration with local health authority workshop on epidemic preparedness in malaria, emerging and re-emerging infection and professional development course for doctors working in government health care were conducted. Seminar and journal clubs and scientific lectures by invited eminent speakers were organized.

The linkages with other upcoming institutions locally, other national and international institutions were established either in form of training or transfer of technology or sponsoring research. Networking with other ICMR institutes like MRC, NIN, NIRRH, NIV, NICED, RMRC(T) were made in form of collaborative research or transfer of technology.

Six monthly news bulletin and library news letters were published and distributed to disseminate information. Besides, booklets on haemoglobinopathy and tribal health issues and prevention methods were published by the Centre and distributed to increase public awareness.

Human and animal ethical committee meetings were conducted periodically. Proper maintenance of animal house was done by regular check-up by veterinary expert. Celebrations like National Science Day and Centres Foundation Day were organized by staff inviting eminent speakers.

The collaboration with state health authorities were strengthened by providing regular OPD services at Capital Hospital on filariasis, diagnostic services on malaria, sickle cell disease and thalassemia and regular surveillance of diarrhoeal disorders and by investigation of outbreak of hepatitis and diarrhoea. Besides frequent interaction with three medical colleges, State AIDS Cell and local health authorities are made. State Government sponsored projects on anaemia, CQ resistance and bed net assessment were executed with timely submission of reports.

Equipping lab and training of scientists in modern techniques strengthened infrastructure of molecular biology laboratory and micronutrient laboratory. The library facility was updated with LAN facility, internet connectivity, free access to several online journals and network connectivity.

Laboratory equipments worth nearly a crore rupees were procured to strengthen the laboratory. The staff quarters were repaired, renovated, new animal facility construction was completed and construction of auditorium, new guest house, hostel facility for trainees and horticultural activity were undertaken this year.

During the year the Centre generated 88 lac rupees (nearly 20%) of annual budget through 22 extramural projects both from national and international level. During 2004, calendar year the Centre published 16 research papers mostly in SCI journals with an average impact factor of 2.34. During 2005 till date, 9 publications are accepted/published of which 7 are SCI publications.

There are 99 regular staff in position that included 16 scientists with various expertise who catered to accomplish output. During the year Council provided an annual budget of Rs.399.92 that were utilized for Centre's activities.

The scientists and staff of this Centre made continuous effort and contributed to significant output of the Centre. I sincerely thank scientists and staff for their endeavour and contributions. I am also thankful to the State health department and other agencies and collaborating institutes for their assistance and co-operation. I extend my deep gratitude to Council for its continuous support, guidance and encouragement. With all round support, the Centre can continue its endeavor to achieve its goal.

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