

Medical research in India

I read with interest the article by S. Arunachalam 'How relevant is medical research done in India?—a study based on *Medline*' (*Curr. Sci.*, 1997, **72**, 912–922). One may or may not agree with his sweeping generalization that 1) Indian medical researches do not cater to the health need of the society, 2) Indian Council of Medical Research (ICMR) has failed to provide leadership to medical science research, 3) Many Indian journals fail to meet the required criteria for inclusion in *Medline* and one may detest his quoting of Kassirer 'very poor countries have much more to worry about than doing high quality research, and that there is no science there'. High quality research can be done even in poor countries.

We have worked on the effect of Indian food and drugs on experimentally produced atherosclerosis, and also on the effect of moon and cold weather on man, both of which were published in impact creating journals. When kala-azar broke out in epidemic form with 100,000 cases in 1997 and 250,000 cases in 1991, we devised and improved the existing regi-

men of treatment with sodium antimony gluconate (SAG) given in the dosage of 6 ml intramuscular daily for 6–10 days; with this regimen 30% of patients relapsed and became unresponsive to the drug. We suggested regimens based on our research works which improved cure and minimized relapse; our regimen of treatment was accepted by the WHO, Geneva.

The social imperatives compelled us to work on local problems and we also improved the regimens of other drugs like pentamidine and amphotericin B, aminosidine and amphotericin B lipid complex in kala-azar. These improved efficacy of drugs and minimized cost of treatment which helped the poor patients. We devised and improved the treatment for post kala-azar dermal leishmaniasis, which cured all patients against the traditional view that one sixth of the patients could not be cured. These reports confirm that we never copied blindly the results of foreign scientists. Our research works on kala-azar were reviewed favourably and got confirmed by other workers too.

I agree that medical research should

cater to the needs of the society. The role of ICMR in giving leadership to medical research certainly needs restructuring and reorientation of that apex organization. With a new Director General and a new Government we should wait and watch for some time. If things do not improve, we should be fearless in criticizing the functioning of ICMR and that of the Government. There should be frequent meetings of the editors of Indian Medical Science Journals to improve their quality. The health problems in Bihar and the problem of kala-azar and also the researches done in India on this problem possibly escaped the attention of Arunachalam.

Indian medical science research is at its take-off stage. It needs honest efforts, financial support and encouragement to catch up with international standards.

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Fluoride-free water for all

I would like to offer the following comments on 'Alum treatment process for fluoride reduction in potable water' by J. Vora and D. D. Joshi (*Curr. Sci.*, 1998, **75**, 338–339).

A process involving paddy husk carbon impregnated with alum, which can be regenerated for use, several times, again by alum, for the removal of fluoride from water, was developed at the Indian Institute of Science, Bangalore, nearly five decades ago (Venkatramanan, K., Krishnaswamy, N. and Ramakrishnan, T., *Indian J. Med. Res.*, 1951, **39**, 211–220). The process involved the impregnation of alum, and consisted of autoclaving paddy husk carbon by 1% sodium hydroxide and soaking overnight in 1% alum solution. Two liters of fluoride-containing water percolated through a bed of 20 g of the material reduced the fluo-

ride content from 2.5 ppm to 0.5 ppm. No aluminium ions were imparted to the water, but the turbidity of the water was removed in the process. The bed could be regenerated to be used for further fluoride removal by passing 1% alum solution through it and washing it free of alum. The method was inexpensive and the materials easily available even in villages. The project was carried out under a scheme sponsored by the Dept of Industries, Govt of Madras.

A pilot plant using this method was set up at Guntakkal, Andhra Pradesh, where natural water contains more than 2 ppm of fluoride and the disease is still rampant; by the then Govt of Madras through the effort of the Chief Secretary, S. Ramanurthy, and a scientist, Bhaskaran, was deputed to oversee the functioning of the plant. The idea was to have

fluoride-free water provided by local bodies or municipalities to the citizens of the area. Though the plant did function satisfactorily, the project was not pursued after the reorganization of the states by the Govt of India.

It is a sad fact that excess fluoride is still present in potable water in several parts of India, with fluorosis resulting in the development of deformed limbs and mottled teeth in men and cattle, through the leaching out of calcium from the body as calcium fluoride. Occasional attempts have been made to tackle this disease by several organizations, including the Indian Council of Medical Research. The paper on the use of alum-treated paddy husk carbon for this purpose was published in the journal of the Council as far back as 1951. No similar method has been developed since then, and the