

Do Indian Children need Pneumococcal Vaccination?

This refers to the Editorial by Levine and Cherian(1). Authors suggest that India could add *H. influenzae* type b and the pneumococcal vaccines to its universal childhood immunization program and that the Government should formulate a time-table for the introduction of pneumococcal vaccine. I feel these recommendations require serious examination.

Authors admit “there are no efficacy data from India”, “data on serotypes or serogroups causing severe pneumococcal disease in India are limited”, “careful population-based studies to estimate the incidence of invasive pneumococcal disease (IPD) from India are lacking”. They also make a dubious statement: “perhaps more importantly, pneumonia remains the leading killer of children in India”.

Taking a wider view of the problems of children in India, one must note that over 27 million babies are born each year. Majority of these are among the underprivileged segments of the population in rural areas and urban slums. Among these, the incidence of low birth weight babies as well as neonatal mortality is very high. Malnutrition is rampant and complete routine immunization coverage very low. In a country with limited resources, priorities in health care must be fixed and appropriately addressed. In the context of immunizations, these include DPT, BCG, polio, measles and hepatitis B. The government has taken several initiatives to maximize routine immunizations in poorly performing States. India is still fighting to eliminate poliomyelitis, which target was to have been reached by the year 2000. Colossal amounts of funds and manpower have been invested (and continue to be put in), which could have been used elsewhere. One must consider any introduction of other life saving vaccines in the current scenario.

Even if India were to obtain pneumococcal vaccine at a heavily subsidized cost (the manufacturer would make huge profits nevertheless!), its inclusion in “routine immunization” program would

entail massive administrative inputs in view of the sheer numbers involved. In the present state of health delivery system in many States, the vaccine would be unlikely to reach those presumably having a higher incidence of severe pneumococcal disease (such as malnourished infants in underprivileged population).

Pediatricians are enamoured of newer vaccines. The conjugate pneumococcal vaccine is being aggressively promoted and individual pediatricians are prescribing it for those who can afford. We must, however, carefully examine various issues and analyse all aspects of the problem when making recommendations to the Government.

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REFERENCE

1. Levine O, Cherian T. Pneumococcal vaccination for Indian Children. *Indian Pediatr* 2007; 44: 491-496.

Do Indian Children need Pneumococcal Vaccination? (Reply)

We appreciate the response of Dr. Srivastava to our editorial on pneumococcal vaccines for India. His conclusion that the decision to introduce pneumococcal vaccines for routine use in India must be carefully examined is consistent with our own call for the government to develop a process and timeline for introducing pneumococcal vaccines. Likewise, we concur with many of his points, including the need to take into account competing priorities and to make special efforts to reach the children at highest risk of pneumonia and pneumococcal disease. These are the children most likely to benefit from all vaccines, including pneumococcal vaccines, and every effort should be made to assure that these children are not denied these life-saving interventions. Perhaps the Indian approach to introduction of

pneumococcal vaccines could be designed to roll out the vaccine in the most affected areas first?

We also agree with Dr. Srivastava that limited health spending should not require the introduction of pneumococcal vaccine to occur at the expense of support for other cost effective and life saving interventions. However, if the evidence suggests, as we believe it will, that pneumococcal vaccines would improve child survival in India, we hope that he and other members of the Academy would urge the government to increase its spending on health to accommodate pneumococcal vaccination and other life-saving interventions. We note that recent government allocations for health in the national budget (2.9% in 2004) indicate that there is substantial room for growth in the national budget (*i.e.*, 97.1% of the budget is spent on “non-health” priorities), and that this level is lower than the allocations in some

neighboring south Asian countries (~8%) and in many industrialized, countries (>15%). With government spending at those levels, Indian children could be assured access to a full range of life-saving interventions including pneumococcal immunizations.

It is clear that Dr Srivastava has the best interests of Indian children in mind when raising these issues and that, like our editorial urges, he is hoping to promote an evidence-based discussion and decision with regard to the vaccine. To this end, we respectfully hope that he will join us in urging for this discussion to proceed without delay because the price of indecision and inaction is the missed opportunity to prevent pneumonia cases and deaths.

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Rabies Vaccine: A Case for Optional Childhood Vaccination

Asia accounts for approximately 90% of all rabies fatalities(1). WHO surveys reveal that half of deaths occur in children and only one third of them receive post exposure treatment (PET) majority being males. Many of these exposures are never reported as a child may be alone with the dog/may not impart significance to few abrasions/may be scared of some painful injections following dog bite and not report it to his caretakers deliberately. Children are more vulnerable to get dog bites as they tend to play with/tease them frequently and can be easily overpowered by dogs. Incubation period also tends to be shorter due to their lesser body surface area and frequent bites on head and neck because of small physique.

The present WHO guidelines include immediate rabies immunoglobulin (RIG) administration along with vaccine to all the class III bites. However, importance of RIG is not known to most of the treating personnel which is being administered only in 2.1% of

the cases, a factor which is responsible for majority of rabies deaths despite receiving cell culture vaccines in time(2). Failure to use RIG amounts to deficient medical services and consequently, if patient develops rabies, the physician is liable to be sued for compensation(3). Further, HRIG is not available freely. The lack of awareness compounded with its non-availability leaves the next option *i.e.*, administration of ERIG (Equine Rabies Immunoglobulin) which requires doubling of the dose and has inherent risks of frequent hypersensitivity reactions. In the latter situation WHO recommends double dose of cell culture vaccine at two different sites while hoping for an immune response to occur before the killer virus reaches the brain.

The immune responses to post exposure vaccination by even the best modern vaccines are regularly seen by the 14th day (protective titer of >0.5 IU/mL) and this response may occur later than the incubation period. On the other hand pre-exposure vaccination generates memory cells which persist for life and on giving booster doses on 0, 3 days of the bite antibodies are produced rapidly within a short span of 1-2 days.