

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.

## CORRESPONDENCE

Future does not hold brighter prospects as dogs which happen to be the major agents of transmission are rapidly increasing in number in India (18.8 million in 1987 and now 25 million)(4). Further, non-availability of RIG is also predicted because of ban being imposed on use of horses for serum production.

Therefore, considering the overall scenario we suggest that the rabies vaccine should be incorporated in the IAP schedule in the category of additional/optional vaccines for pre-exposure prophylaxis. The efficacy of this vaccine in preventing rabies deaths in children should definitely place it before the chicken pox vaccine which seems to be more of manufacturers priority where the prevention is mainly in terms of few working/school days lost because of illness. IAP has incorporated antirabies vaccine in the list of recommended vaccines, however, it has not placed it at its right place(5). A vaccine which prevents deaths should be offered as pre-exposure prophylaxis to all those children whose daily activity involves an environment prone to rabid animal bites.

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