
Brief Reports

Immunization Status in Hospitalized Children with Acute Paralytic Poliomyelitis

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The increasing immunization coverage in the country has been associated with a decline in the incidence of paralytic poliomyelitis. However, amongst the reported cases of acute poliomyelitis, 10-20% occur amongst fully immunized children. The present communication evaluates the relationship of acute paralytic poliomyelitis in hospitalized children to previous immunization status in Patna, Bihar.

Subjects and Methods

The study material comprised of cases of acute paralytic poliomyelitis admitted to the Upgraded Department of Pediatrics, Patna Medical College between June 1990 and May 1991. Patient details noted included age, sex, habitat,

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immunization status and place of immunization. The details of immunization status were verified from the immunization card, whenever available.

Based on previous immunization status, the cases were divided into three groups: (i) *Group A*—Those fully immunized with 3 doses of OPV; (ii) *Group B*—Those who had received 1 or 2 doses of OPV; and (iii) *Group C*—Those unimmunized (no OPV doses).

Results

Ninety six cases of acute paralytic poliomyelitis were analyzed. Of these, 14 (15%) belonged to Group A, 32 (33%) to Group B and 50 (52%) to Group C. The age wise distribution of cases in the three groups revealed that 64% in Group A and 63% in Group B were in the 13-36 months age group. In Group C, an equal proportion were below 12 months (44%) and between 13-36 months (40%). Spinal type of poliomyelitis was the most frequent and comprised 78% of cases of Group A and 77% in Groups B and C combined.

Muscle power grading revealed that the fully immunized children had lower severe muscular weakness as compared to unimmunized or partially immunized subjects (Table I). Almost 80% of the paralytic cases in Groups A and B had received their OPV doses at the Primary Health Center (PHC) or Subcenter (Table II).

Discussion

In the present study, out of 96 cases of acute paralytic poliomyelitis, 14

TABLE I- *Severity of Muscular Weakness and Immunization Status.*

Group	Muscle Weakness(%)		
	Mild	Moderate	Severe
A (n=14)	5(36)	6(43)	3(21)
B (n=82)	16(20)	26(32)	40(49)

TABLE II- *Relationship of Paralytic Poliomyelitis to Place of Immunization.*

Immunization place	Group A	Group B
	No. (%)	No. (%)
Medical College	1 (7)	2 (6)
Dispensary	2(14)	5(16)
PHC	4(29)	9(28)
Subcenter	7(50)	16(50)

(15%), 32 (33%) and 50 (52%) cases were fully immunized, partially immunized and unimmunized, respectively. A similar profile has been reported by earlier workers(1,2). The age and sex distribution was also in conformity with previous experience(3-5). Spinal type was the most frequent variety as almost reported earlier (6,7).

In consonance with the Delhi experience⁽⁶⁾, we documented a better muscle power in fully immunized subjects as compared to partially immunized or unimmunized cases. However, other workers have reported no difference in this context(7).

The maximum number of cases in both fully and partially immunized groups had received OPV either at Subcenters or PHCs which are mainly located in rural areas. The cold chain

maintenance technology in this setting may be effected by frequent power cuts. Poor maintenance of thermocole carriers by immunization workers, poor knowledge regarding it's carriage in hand bags and sunlight exposure could be the other possible reasons for vaccine failure.

It is concluded that vaccination failure rate is high in Patna but better muscle power may be preserved in immunized groups as compared to the partially or unimmunized cases. There is an urgent need to define the reasons for vaccination failure in this setting and to strengthen the cold chain maintenance at the periphery.

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