

as 1 death per 1,000 live births in Delhi to as high as 66.7 deaths/1,000 live births in rural areas of Allahabad division(5). Though the figure for Allahabad (rural) has come down to 18.7/1,000 live births as is evident in this study, the figure is still high when compared with the national average of 13.3(2) and 15.6 deaths/1,000 live births for rural areas(6).

In our study 61% of the neonatal deaths were attributed to tetanus. Unfortunately, only a slight decline in the rates have occurred and no significant differences have been noted inspite of the fact that now trained birth attendant is available in every village and six years have elapsed since the start of UIP. The causes of neonatal tetanus include unhygienic cutting of the cord and lack of immunization of mothers with tetanus toxoid during pregnancy. In conformity with earlier reports(6), 86-93% of the deliveries in rural areas are conducted by family members with the help of untrained birth attendants. Similarly, coverage with two doses of tetanus toxoid was also observed to be low. The corrective measures include (i) ensuring two doses of antenatal tetanus toxoid administration, and (ii) health education to everyone concerned regarding the importance of conducting hygienic deliveries.

REFERENCES

1. Sokhey S, Bhargava I, Basu RN. Immunization Programme in India—A Handbook for Medical Officers. Ministry of Health and Family Welfare, Government of India, 1984, pp 34-37.
2. National Immunization Programme Module to Conduct Disease Surveillance. Ministry of Health and Family Welfare, Government of India, 1989, pp 61-62.
3. Kumar V, Kumar R, Mathur N, Raina N, Bhasin M, Chakraverty A. Neonatal tetanus mortality in rural community of Haryana. *Indian Pediatr* 1988, 25: 167-168.

4. Basu RN, Sokhey J. Special combined survey for poliomyelitis and neonatal tetanus as supplement to routine surveillance system in India. *J Comm Dis* 1984, 16: 148-153.
5. Basu RN. Control of neonatal tetanus. *Indian Pediatr* 1982, 19: 891-892.
6. Registrar General of India. Infant and Child Mortality—A Preliminary Report. Office of the Registrar General of India. Ministry of Home Affairs, 1979, pp 23a-23b.

Unusual Presentation of Poliomyelitis

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The annual incidence of acute poliomyelitis is 2-5 per thousand rural pre-school children and 1-3 per thousand urban school children(1). In India poliomyelitis affects young children mostly between 6 months to 5 years. Recent studies have indicated a changing trend in the epidemiology of polio virus infection. It is becoming increasingly a disease of school

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going or older children(2,3). Concomitant with this rise in age at onset, the disease also shows an increase in severity(4).

We report a case of poliomyelitis with quadriplegia in a 10 year-old-girl who recovered completely over an extremely short period.

Case Report

A ten-year-old unimmunized girl was admitted with a history of fever accompanied by weakness of lower limbs of two days duration followed 24 hours later by incontinence of urine. The weakness subsequently spread in an ascending manner involving trunk and neck muscles.

On examination the patient was conscious and afebrile. Cranial nerves were normal. The paralysis was symmetrical and ascending in character. However, toes and fingers were spared. The respiratory muscles and diaphragm were not involved. The superficial reflexes were absent, tendon reflexes diminished and plantar response was flexor. There was no sensory loss.

The cerebrospinal fluid examination was normal. Motor nerve conduction velocity was within normal limits. Serum electrolytes and electrocardiogram was normal.

On day four, bladder function started showing improvement followed by recovery of motor power in the upper limbs and then lower limbs. By day thirteen normal power was regained in all the muscles.

Paired sera at an interval of fourteen days showed an eight fold rise in the antibody titres of poliovirus type 2, done by microneutralization method(5).

Discussion

The diagnosis of poliomyelitis in this case is undisputed. Landry Gullain Barre

syndrome and hypokalemic paralysis were ruled out on the basis of a normal cerebrospinal fluid, nerve conduction velocity and serum electrolytes.

The unusual features in this case have been older age, LGB syndrome like presentation, and complete recovery within 13 days inspite of extensive paralysis with quadriplegia. Only 2.6% cases have been described above 10 years of age(6). In one report(1) the incidence above 5 years of age was just 2.8%. In poliomyelitis, quadriplegia has been reported in only 1.4% cases(7).

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REFERENCES

1. Basu RN. Magnitude of problem of poliomyelitis in India. *Indian Pediatr* 1981, 18: 507-511.
2. Nathansan N, Martin JR. The epidemiology of poliomyelitis. Enigma surrounding its appearance, epidemicity and disappearance. *Am J Epidemiol* 1979, 110: 672-692.
3. Cherry JD. Enteroviruses. *In: Text Book of Pediatric Infectious Diseases*, 2nd edn. Eds Feigin RD, Cherry JD. Philadelphia, WB Saunders, 1987, pp 1729-1790.
4. Lauro S, Halstead C, Rossi D. New problem in old polio patients: Results of a survey of 539 polio survivors. *Orthopedics* 1985, 8: 845-850.
5. Melnick JL, Herbert A, Wenner, Allan Philips C. Enteroviruses. *In: Diagnostic Procedures for Viral, Chlamydial and Rickettsial Infections*. Eds Lennette EH, Schmidt NS. American Public Health Association Inc, 1979, p 471.

6. Vijayan P, Mukundan P, Shukoor AA, Panicker CKJ, Jacob-John T. Epidemic poliomyelitis. *Indian Pediatr* 1985, 22: 569-573.
7. Srivastava VK, Laisram N, Srivastava RK. Immunization status in paralytic poliomyelitis—A hospital based study. *Indian Pediatr* 1989, 26: 430-433.

Acute Paralytic Poliomyelitis in Rural Maharashtra

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A survey conducted in 1981 in India reported the annual incidence rate of poliomyelitis in children of 0-4 years varied from 1.5 to 1.9 per thousand children with an estimate that on an average there were 1,40,000 to 1,79,000 cases of poliomyelitis in India(1). This incidence was the highest in the world. Recently, the National EPI review has worked out the annual incidence rate in children below 5 years to be 0.90 per thousand children. This is lower than that reported earlier, but still very far away from the goal of global eradication of poliomyelitis by the year 2000 as proposed by the 41st World Health Assembly in May 1988(2).

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The aim of this study was to assess the clinical profile and factors predisposing to development of poliomyelitis in cases of acute poliomyelitis admitted in a rural hospital of Eastern Maharashtra.

Material and Methods

The study comprised 64 cases of acute poliomyelitis admitted to the Pediatric Wards of Mahatma Gandhi Institute of Medical Sciences, Sevagram, Wardha. The complete clinical features from the onset of the prodromal symptoms till the development of paralysis were noted. The presence of factors known to provoke paralysis in patients of poliomyelitis were recorded, e.g., trauma, intramuscular injections and tonsillectomy. The vaccination status was determined by detailed questioning of parents and verified from vaccination cards.

Results

Of 64 cases of acute poliomyelitis, 13 (20.6%) were less than 1 year, 30 (46.8%) between 1 and 2 years and 19 (29.7%) more than 2 years. The youngest patient was 4-months-old.

Forty nine patients (76.5%) did not receive vaccination against poliomyelitis. In 12 patients (18.8%) the primary immunization was either incomplete or no booster dose was administered. In spite of receiving a complete course of immunization, 3 children (4.7%) developed acute poliomyelitis.

Fever was the main presenting complaint (52 cases) followed by diarrhea (9 cases), cough (7 cases) and vomiting (3 cases). Eight patients did not have any prodromal symptoms. No significant relationship of symptoms to the age were found (Table I).

No provocative factors for poliomyelitis were identified in 41 cases (64.0%). However, 23 cases (36.0%) had received intra-