

Assessment of Zero' dose of Polio Vaccine and Factors Influencing Coverage of Zero Polio Dose in India

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ABSTRACT

Background: Immunization schedule for polio vaccination is zero dose at birth and next doses at 6, 10 and 14 weeks are given. Vaccination with zero polio dose is neglected in India where zero dose can be counted up to 15 days from birth; still its coverage is questionable. **Purpose:** To assess the zero dose of polio vaccination status of children and factors influencing it. **Materials and Methods:** A cross-sectional study was undertaken in the ten Rural Block Community Health Centers CHC's of Pali District in Rajasthan, India among children (n = 23715) born in hospitals and got discharged from hospitals in study period of April 2012 to March 2013. **Results:** A significant number of children were not getting 'Zero' dose of Oral Polio Vaccine as it is found that 12487 were vaccinated with zero polio dose (53%) and 11228 (47%) were not vaccinated with zero polio dose. The vaccination status was significantly influenced by religion as in non-vaccinated children Hindu were more (N=8505) 76%. Most common reasons in non-vaccination was religious belief that "no food other than mother's milk should be given before 'Janam -Ghutti' which is to be given at home of child born by elder in family" (N=7597) 68%. Other reasons were a) 9%-No one informed about zero dose of polio vaccine /Immunization b) 8%-Discharge from hospital within 6 hours of delivery c) 4%-Want to take dose from local ANM/ Private doctor d) 4%-Refusal for vaccination e) 1%-Non availability of Vaccine f) 3%Non-availability of staff/ANM responsible for vaccination) 3%-Not willing to tell reason **Conclusion:** This study therefore confirms that religion and zero polio dose administration are appears to be significantly importance. In India zero polio dose vaccination is not given so much importance and it is usually given after 3rd day after birth as children were not vaccinated in hospital before discharge. There is significant association of religion and beliefs of parents regarding vaccination of children with oral polio vaccination.

Keywords: Oral Polio Vaccine, Zero Dose, Vaccination, Religion

INTRODUCTION

India now completed 3 years without any wild polio virus transmission and so got officially certified as polio free country. India cannot pause as long as wild poliovirus continues to circulate

anywhere in the world¹. As per WHO the primary series of three dose of Oral Polio vaccinations should be administered according to the particular national immunization schedule, for example at 6, 10 and 14 weeks, or 2, 4 and 6 months of age. The interval between dose should be at least 4 weeks.

An Oral Polio Vaccine (OPV) dose at birth should be added in countries at higher risk of poliovirus importation and spread². It is observed that Oral polio immunization beginning in the newborn period up to 4th day was more beneficial than administering zero polio dose after first week.³ Observed in current situation of outbreak in Syria, Syria's last confirmed polio case due to an imported wild poliovirus was in 1999. Since then Syria remained polio free till October 2013. Following reports of a cluster of 14 acute flaccid paralysis (AFP) cases up to 17 October 2013, wild poliovirus type 1 (WPV1) has been isolated from 10 of the cases under investigation. The comparison of immunity profile of the polio cases shows the clear effect of low OPV dose as 50% of cases not received any polio dose including zero dose of polio vaccine.⁴ Thus; the later onset of immunization schedule and low immunization leaves more children susceptible to poliomyelitis during the first 3 months of life. And administration of Oral Polio Vaccine on 3rd day of life leads to seroconversion in 15.3% of infants to all three polio virus types by the age of 6 weeks which make child more protected in first 6 weeks from poliovirus.⁵

OBJECTIVE

To assess the coverage of zero polio dose in children born at government institutions/hospitals and to assess factors affecting its coverage, and to assess need for new policy for zero polio dose in India.

MATERIAL & METHOD

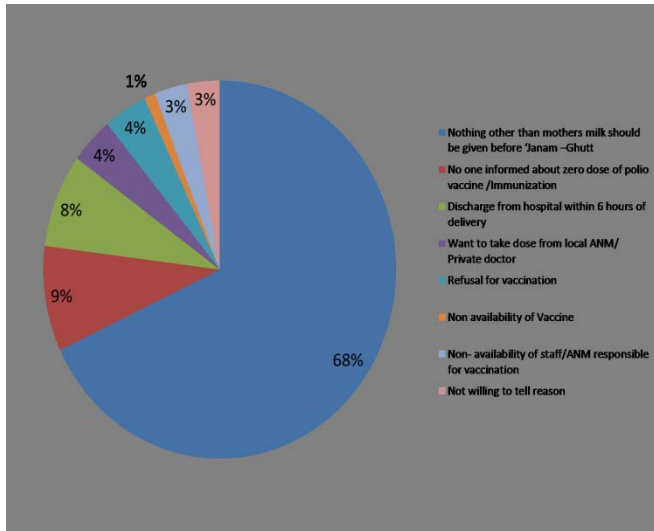
To assess the zero polio vaccination status of children and factors influencing it, a cross-sectional study was undertaken in the All ten Rural Block Community Health Centers (CHC's) of Pali District in Rajasthan, India among children (n = 23715) born in hospitals and got discharged from hospitals in a period from April 2012 to

March 2013, data cross verified from immunization coverage data available in CHC's hospital. Information regarding vaccination and reason for not getting zero dose in collected on a predesigned questionnaire form parents. Informed consent was taken from parents of children. Study approved by Institutional Ethics committee. Children were categorized as 'Vaccinated' and 'non-Vaccinated' according to working definitions. Children receiving zero dose of OPV before discharging from hospitals were categorized as Vaccinated and children not received OPV dose at time of discharge were categorized as non-Vaccinated. Information of children with parents religion and address is recorded on information register. Data were entered in a Statistical Package for Social Sciences trial version 17 and analyzed using descriptive statistics.

RESULT

Total 23715 children were assessed for immunization status and found that 12487 were vaccinated with zero polio dose (53%) and 11228 (47%) were not vaccinated with zero polio dose. After interview of parents many factors found to influence the immunization status were identified. The vaccination status was significantly influenced by religion as in non-vaccinated Hindu were more (N=8505) 76%. Most common reasons in non-vaccination was religious belief that "no food other than mothers milk should be given before 'Janam -Ghutti' which is to be given at home of child born by elder in family" (N=7597) 68%. Other reasons were a) 9%-No one informed about zero dose of polio vaccine /Immunization b) 8%-Discharge from hospital within 6 hours of delivery c) 4%-Want to take dose from local ANM/ Private doctor d) 4%-Refusal for vaccination e) 1%-Non availability of Vaccine f) 3%Non- availability of staff/ANM responsible for vaccination) 3%-Not willing to tell reason. In one of the block Sojat as there was procedure of noting of zero polio dose on

discharge paper before discharging patient from hospital and counseling of parents for need of zero dose by Health staff help in achieving zero polio vaccination of most of children (93%).



CONCLUSIONS

Religion and zero polio dose administration appears to be significantly important. In India zero polio dose for vaccination is not given so much importance and it is usually given after 3rd day after birth as children were not vaccinated in hospital before discharge. Significant association of religion and beliefs of parents regarding vaccination of children with oral polio vaccine which leads to refusal of zero dose vaccination for oral polio vaccine.

DISCUSSION

India is fighting against Polio since decades and now time had come to get polio free status and Eradication certification for Polio in early 2014. This all is possible with immunization of children with Oral Polio Vaccine (OPV) through Routine immunization (RI) and Supplementary Immunization activities (SIA). In India administration and acceptance of zero polio dose as OPV is neglected. As per WHO and Ministry of Health & Family Welfare Government of India (MHFW) immunization schedule for polio is zero dose at birth and next doses at 6, 10 and 14 weeks

are given ⁶. In India zero dose can be counted up to 15 days from birth still its coverage is questionable as seen in study results. As there are multiple reasons responsible for not giving vaccination to newborns so there should be detailed analysis countrywide and should make a plan to overcome these hurdles in immunization programs.

RECOMMENDATION

Guidelines for vaccination of children before discharging patient from hospital should be made by government for improving coverage of zero polio dose considering benefits of its administration in first week of life. Vaccination guideline for zero polio dose maximum giving time should be minimized to one week maximum from fifteen days to strengthen zero polio dose administration by hospitals. Counseling of parents before discharging for vaccination of child should be done and documented. As there is significant association of refusal of Oral polio vaccine in first 3 days of birth 'birth dose' can be given as injected inactivated polio vaccine (IPV). Studies which categorize the types of barriers or determinants which lie between children and Zero polio dose in terms of geographical, social, economic, cultural and organizational factors should be carried out to bridge the gap between children and Vaccination. Information, education and communication strategies for immunization should be revised as there are multiple reasons responsible for non- vaccination of children which can be cleared through proper information and education of parents.

Conflict of Interests

The author declares that there is no conflict of interests.

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