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Research Article

A cross sectional study on awareness about injectable polio vaccine among pregnant women and mothers of children under 14 weeks in a rural area of Kannur, North Kerala, India

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ABSTRACT

Background: Poliomyelitis, a highly infectious disease which can cause irreversible total paralysis which mainly affects the children under five years of age. As the Government was introducing the injectable polio vaccine (IPV) from April 2016 in Kerala as a part of "polio end game strategy", the study was conducted to assess the awareness about IPV. The aim was to assess the level of knowledge about IPV and attitude towards IPV introduction in the national immunisation schedule among pregnant mothers and mothers having children <14 weeks, in rural Kannur, North Kerala, India

Methods: A cross sectional study was conducted in Anjarkandy grama panchayath under the rural field practice area of community medicine department, Kannur Medical College, Kannur, Kerala, India. Convenient sampling method was used for the sampling. Data was collected from pregnant mothers and mothers with children <14weeks by administering a pretested, semi-structured questionnaire by visiting houses and descriptive statistics were analysed.

Results: 56% (84) aware about main symptom of polio as paralysis. Only 14% (21) mothers were heard about IPV and its introduction in national immunisation schedule. The common sources of information about IPV were television (38.09%) and health workers (23.8%). About 91% (136) of the mothers were willing to vaccinate their children with IPV when government launches IPV in future.

Conclusions: Awareness about poliomyelitis was of intermediate level, awareness about IPV and its introduction into national immunisation schedule was poor but attitude towards IPV introduction into national immunisation schedule was positive. There is a need to increase the awareness by giving periodic health education to mothers by health workers and doctors.

Keywords: Injectable polio vaccine (IPV), Awareness, Pregnant mothers, Mothers of children under 14 weeks, North Kerala

INTRODUCTION

Poliomyelitis, a highly infectious disease caused by virus which invades the nervous system and can cause irreversible total paralysis. This mainly affects the children under five years of age and cases have decreased by over 99% since 1988, from an estimated 350 000 cases then, to 74 reported cases in 2015. Today only two countries (Pakistan and Afghanistan) are endemic for poliomyelitis.[1]

The important milestone in preventing poliomyelitis is interruption of endemic wild polio virus (WPV) circulation which was achieved by India during January

2011 to March 2012 and India was declared polio free by World Health Organisation (WHO) during March 2014.[2] This extraordinary achievement was done by vaccinating the children with polio vaccine. But India is still at the risk of developing polio since our neighbouring countries like Afghanistan, Pakistan are not free from polio.[1]

To achieve and sustain a polio-free world, "polio eradication and endgame strategic plan 2013-2018" was introduced by World Health Assembly and under this end game strategy, by end of 2015, introduce at least one dose of IPV into routine immunization systems before the switch from trivalent oral polio vaccine (tOPV) to bivalent oral polio vaccine (bOPV, containing types 1 and 3 poliovirus) as a risk mitigation measure before the withdrawal of type 2 OPV.[3] Since the government was introducing the IPV from April 2016 in Kerala and also many instances of resistance for immunisation from parts of North Kerala were reported.[4,5] So we undertook this study, among pregnant mothers and mothers having children less than 14 weeks, to assess the level of knowledge about IPV and attitude towards IPV introduction in the national immunisation schedule, in rural Kannur, North Kerala, India.

METHODS

It was a cross sectional study design. Study was conducted in Anjarakandy gram panchayath at the rural field practice area of department of community medicine, Kannur Medical College, Kannur, Kerala, India.

The pregnant mothers and mothers having children less than 14 weeks in Anjarakandy gram panchayath- residing in the rural field practice area of Department of Community Medicine, Kannur Medical College were included in the study.

Inclusion criteria

Pregnant mothers and mothers having any child less than 14 weeks old and who were willing to participate were included in the study.

Exclusion criteria

Pregnant mothers and mothers having children less than 14 weeks old who were having temporary residence were excluded.

A study conducted for 2 months (January- February 2016) by Rachna K et al at Ahemdabad, the knowledge of mothers about polio disease was found that 85%, with allowable error of 7%, the sample size of 150 was calculated using the formula $n=4pq/d^2$ (where p-prevalence (85%), q=100-p, d-allowable error at 7%=5.95, n=144 which was rounded off to 150).[6]

Sampling method

A convenient sampling method was used to collect data. Data was collected with the help of Anganwadi workers by visiting the houses in the areas under anganwadis in Anjarakandy Panchayath–Kameth, Palayam, Ekkal, Panniyamparambath, Odathil Peedika.

Data collection

The study was conducted after taking ethical clearance from the institutional ethics committee, Kannur Medical College. After explaining the purpose of the study and after taking informed written consent from study participants the data was collected from those who were willing to participate in the study. The data was collected by administering a pretested, semi structured questionnaire to the mothers.

Data analysis

Data was entered in Microsoft Excel and descriptive statistics were analysed using Epi Data Analysis V2.2.2.182 in the form of frequencies and proportions.

RESULTS

Basic details of the participants

A total of 150 pregnant mothers and mothers having children less than 14 weeks were involved in the study and the mean age of the mothers was 27.3±3.9 years. About 34% (51), 30.7% (46) and 24% (36) mothers had education up to graduation, high school and higher secondary respectively (Figure 1). In this study, all mothers were immunised against tetanus and all children (≤14 weeks) were immunised up to date for their age.

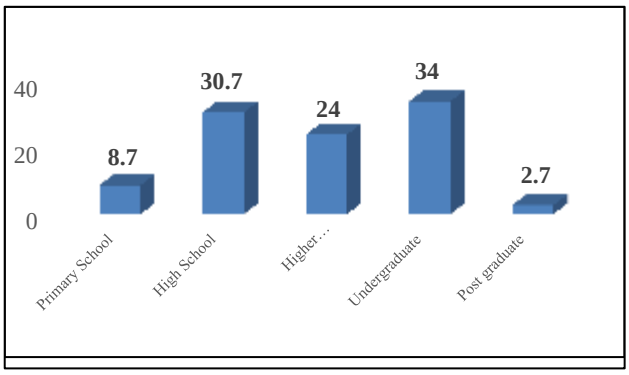

Figure 1: Educational status of the study population.

Awareness about poliomyelitis and vaccination for polio

About 56% (84) mothers were aware that main symptom of poliomyelitis was paralysis. Around 31.3% (47) persons said that in India wild polio cases are still getting reported, 23.3% (35) persons said that no wild polio cases were getting reported and 45.3% (68) mothers were not

aware about the status. About 46% (69) mothers told that there is a chance of developing polio cases in future and 46.7% (70) do not have knowledge about the same and 55.3% (83) mothers said that polio can be prevented by vaccination (Table 1). 65.3% (98) and 11.3% (17) of the mothers told that the present route of administration of polio vaccine as oral drops and as injection respectively, 23.3% (35) were told that they do not know route of administration.

Table 1: Awareness about poliomyelitis and vaccination for polio among pregnant mothers and mothers having children <14 weeks in rural area of Kannur, North Kerala, India.

Awareness about poliomyelitis and vaccination for polio	Yes n (%)	No n (%)	Do not Know n (%)
Wild polio cases are still getting reported in India	47 (31.3)	35 (23.3)	68 (45.3)
Chance of developing polio cases in future	69 (46.0)	11 (7.3)	70 (46.7)
Prevention of poliomyelitis by vaccination	83 (55.3)	11 (7.3)	56 (37.3)

Place of routine immunisation for the child

Most of the mothers were taking their children to primary health centres (44.7%) and anganwadi centres (32.7%) for routine immunisation. Only 11.3% were using private services for routine immunisation.

Awareness about injectable polio vaccine (IPV)

Only 14% (21) of the mothers were aware that IPV will be introduced in national immunisation schedule from April 2016 and heard about IPV. Out of 21 mothers who were aware of IPV introduction, 47.6% (10) said that IPV was to be given along with 3rd dose of pentavalent vaccine and 33.3% (7) had no knowledge about the schedule. 71.4% (15) told that use of IPV was to get double protection, 4.8% (1) told that IPV not needed and 23.8% (5) not responded and about 28.6 (6) said that there may be major side effects for IPV, 23.8% (5) told that there may be no major side effects for IPV and 47.6% (10) told that they do not know about the side effects.

Out of 21 mothers, 52% (11) mothers told that they had already given at least one dose of IPV to their child (all of them from private practitioner) and 71.4% (15) correctly said that OPV administration will be continued even after introduction IPV. The common sources of information about IPV were television (38.09%), health workers (23.8%) and newspaper (14.28%).

Willingness of mothers to vaccinate with IPV

About 91% (136) of the mothers told that they are willing to vaccinate their child with IPV when the government introduces from April 2016, only 6% (9) said that they were not willing to vaccinate at present.

DISCUSSION

Awareness about poliomyelitis and vaccination for polio

In this study, both mothers and children were immunised up to date and about more than half of the mothers were aware about main symptom of poliomyelitis as paralysis which was slightly lower compared to studies done by Joseph N et al in South India (63.1%) and Singh MM et al at Delhi (70.3%).[7,8] The knowledge about polio eradication from India was present only among one quarter of mothers and which was slightly higher compared to study done by Tiwari et al (13.63%).[9] Only about half of the mothers were aware that polio can be prevented by immunisation and this was slightly lower compared to studies done by Ahmad IM et al (66%) in Nigeria.[10] Almost one third of the mothers were not aware about the route of administration of polio vaccine (OPV) at present.

Place of routine immunisation for the child

Almost 90% of the mothers use government services for routine immunisation and government utilisation was more compared to study done by Angadi MM et al. in Bijapur (79%).[11]

Awareness about injectable polio vaccine (IPV)

In this study, about 14% of the mothers were heard about IPV and its introduction in national immunisation schedule from April 2016, this knowledge was slightly higher to study conducted by Tiwari et al. (5.45%).[9] Among the mothers who were aware about IPV, almost half of the mothers told the correct timing of IPV vaccination schedule, about three fourth of them told that IPV introduction is for giving double protection and this was similar to study of Tiwari et al (73.3%) and about quarter of mothers feared there may be some major side effects with IPV.[9]

Mothers who were aware about IPV, about half of them already given at least one dose of IPV to their child from private practitioner and three fourth of them were having correct knowledge about continuation of OPV even after introduction of IPV in national immunisation schedule. Around one third and one fourth of the mothers told that source of information about IPV were television and health workers respectively which was slightly less compared to other studies on routine immunisation or pulse polio immunisation.[6,7,11,12]

Willingness of mothers to vaccinate with IPV

About 91% of the mothers told that they are willing to vaccinate their child with IPV when the government introduces from April 2016 and there was more acceptance of immunisation compared to study done by Ahmad IM et al (80%) in Nigeria.[10] Even though the knowledge about IPV is poor among the mothers, still most of them were willing to vaccinate their children and this finding may be very important in view of recent reports of resistance for immunisation in North Kerala and positive attitude of mothers towards vaccination.[4,5]

Limitations of the study were, the study sample size was slightly small and the sampling method used was convenient sampling, so there may be chance of selection of bias.

So, in this study the awareness about IPV among mothers was poor and attitude towards vaccination with IPV is good.

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