IMMUNIZATION STATUS OF CHILDREN (1 TO 2 YEARS) WITH ACUTE DIARRHEA PRESENTING TO A TERTIARY CARE HOSPITAL AT PESHAWAR

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ABSTRACT

Objective: To determine the status of immunization in children (01 to 2 years) presenting with acute diarrhea to Pediatrics department, PGMI/ LRH, Peshawar.

Methodology: This cross sectional study was conducted at Lady Reading Hospital Peshawar after the permission from Hospital ethical committee. After informed written consent, all parents of these patients were inquired about the status of their children's immunization through EPI cards; and the causes of non-immunization or partial immunization of these children had also been investigated. Total 412 patients were observed, in which 275 (66.75%) were male and 137 (33.25%) were female patients. Male to female ratio was 2:1. Most patients presented in 5-8 months which were 205 (49.8%) while 139 (33.7%) patients were in the age range of less than or equal to 5 months, 68 (16.5%) were of age range more than 8 months. The study included age ranged from 3 up to 9.5 months. Average age was 6 months $\pm$ 1.87SD. All this information was recorded on pre-designed proforma, and results were interpreted using SPSS v.12 for windows.

Results: In this study, 412 patients with acute diarrhea had been observed. Immunization status in patients presenting with acute diarrhea shows that 166 (40.29%) were fully immunized, 82 (19.9%) were partially immunized while 164 (39.81%) were found not immunized.

Conclusion: Majority of the patients were not immunized after the hard efforts of EPI programme which needs serious considerations.

Keywords: Acute diarrhea, standardized treatment, immunization, consistency.

INTRODUCTION

Immunization is the most cost-effective public health intervention that has had the greatest impact on health of the people. It has been estimated that between two to three million child deaths are averted annually through vaccination against diphtheria, tetanus, pertussis and measles and many more future deaths averted in older groups (e.g. 600,000 future deaths prevented annually through hepatitis B vaccination). However, vaccine-preventable diseases are still responsible for about 25% of the 10 million deaths occurring annually among children under five years of age.[1]

The Expanded Programme on Immunization (EPI) was initiated by the World Health Organization (WHO) in 1974 when less than 5% of the world's children were immunized during their first year of life against six diseases (Diphtheria, Tetanus, Pertussis, Polio, Measles, and Tuberculosis).[2]

In Pakistan, Expanded Programme of Immunization was started in the year 1978 with the ultimate objective of reduction in morbidity and mortality caused by six vaccine preventable diseases. In addition, vaccination against Hepatitis B was included in EPI in July 2001.[3]

Results of a local study conducted at Department of Journalism and Mass Communication, Kohat University of Science and Technology (KUST) KPK, Pakistan showed that, out of the total sample frame of 402 families (85.9%) have fully immunized their children. The percentage of the families which did not immunize their children was 10.5 % (49 cases). There was a small percentage of 3.6% which opted for the partial immunization of their children.[4]

In another local study conducted at Department of Community Health Sciences, Shifa College of Medicine, Islamabad, full immunization status was found in only 58% of population studied. Awareness with the name and schedule of vaccination was significantly associated with immunization status.[5]

A study done at the Department of Pediatrics, Lady Reading Hospital, Peshawar showed that out of 500 children, full immunization for the six diseases were

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received only by 188 children i.e. (37.6%), while 110 (22%) partially Immunized and 202 (40.4%) un-immunized.[6]

To assess the immunization status of children between 1-2 years of age coming to the Children Hospital and Institute of Child Health, Lahore, information was gathered from parents about the immunization status of 50 children. The results showed that maximum immunization was done at Government hospitals (47%). About 40 % of the children had their first immunization at the time of birth.[7]

As there is always a need to improve coverage of routine immunization as a part of systemic effort to further strengthens EPI, my study results will help strengthening EPI by suggesting;

- The scope for improving coverage of EPI
- The need to start immunization programme for all those children who are not immunized or are partially immunized, coming to the hospital with various diseases.

This will exert significant effects on vaccine preventable diseases by limiting the number of cases, decreasing clustering of cases within households and stopping the needless deaths of children caused by these diseases.

METHODOLOGY

This descriptive cross sectional study was conducted in department of paediatrics, PGMI Lady Reading Hospital Peshawar, for six months from January to June 2013. A total of 412 children aged (01 – 2 years) of both sexes with acute diarrhea passing three or more loose stools per day for no more than two weeks were selected for the study. Children having occasional immunization on National polio days, children without EPI cards but claiming full or partial immunization, children who have not received full course because of contraindications, and children with diarrhea for more than two weeks were excluded from the study.

After getting approval from the hospital ethical committee to conduct the study, data was collected of all those patients who came with acute diarrhea, to OPD or emergency department of Postgraduate Medical Institute, Lady Reading Hospital, Peshawar. Patients who have fulfilled the inclusion criteria were included in the study. An informed written consent was taken from parents or relatives of the patients. All parents of these patients were inquired about the status of the children's immunization through EPI cards, whether they were fully immunized or not or they were partially immunized and what were the causes of not immunization or partial immunization of these children.

All this information and other demographic data like name, age, sex, was recorded on a proforma designed for the purpose.

All the qualitative variables like sex, status of immunization that is fully immunized, partially immunized, not immunized, were analyzed for percentages and frequencies. Mean $\pm$ standard deviation were calculated for quantitative variables like age. For gender, male to female ratio was calculated. Results were presented in the form of tables and graphs. All the data were stored and analyzed by statistical program SPSS version 12 for windows.

RESULTS

In this study, 412 patients with acute gastroenteritis were observed, in which 275 (66.75%) were male and 137 (33.25%) were female patients. Male to female ratio was 2:1

Patients age was divided in three categories, out of which most presented in 5-8 months which were 205 (49.8%) while 139 (33.7%) patients were in the age range of less than or equal to 5 months, 68 (16.5%) were of age range more than 8 months. The study included

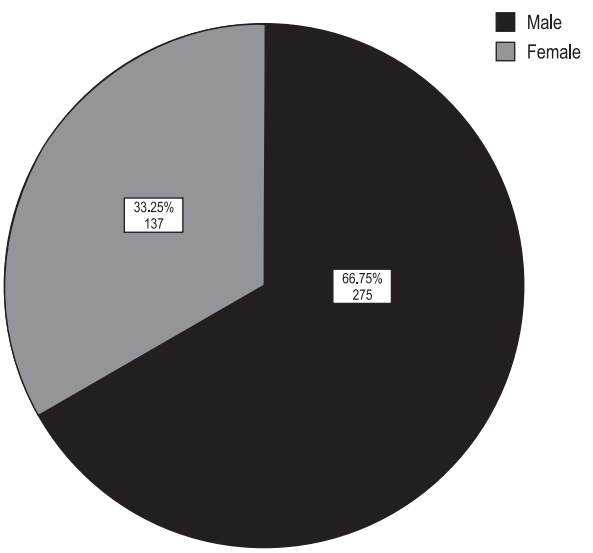

Figure no: 1. Gender wise distribution of patients

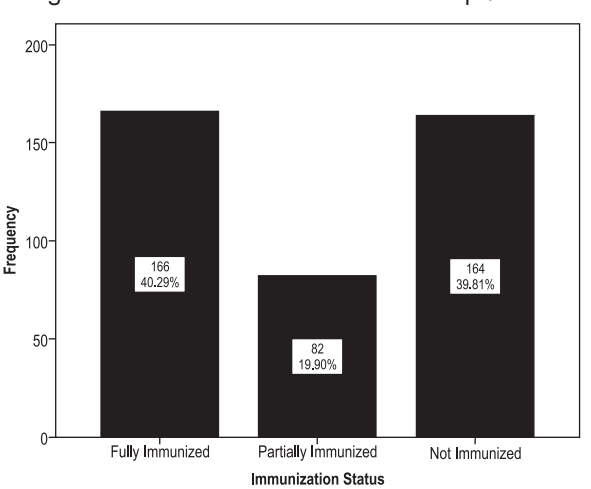

Figure no: 2. Distribution of Immunization status

Table: 1. Age wise distribution of patients (n=412)

Age ranges (in months)	Frequency	Percentage
<= 5.00	139	33.7%
5 - 8.00	205	49.8%
8+	68	16.5%
Total	412	100.0%

age ranged from 3 up to 9.5 months. Average age was 6 months $\pm$ 1.87 SD.

Immunization status in patients presenting with acute diarrhea shows that 166 (40.29%) were fully immunized, 82 (19.9%) were partially immunized while 164 (39.81%) were found not immunized.

Age wise distribution of immunization status shows that 56 (40.3%) were fully immunized, 27 (19.4%) were partially immunized and 56 (40.3%) were found not immunized in age less than or equal to 5 months. While 82 (40%) were fully immunized, 42 (20.5%) patients have partially immunized and 81 (39.5%) were not immunized. Similarly age groups of more than 8 months were fully immunized, 13 (19.1%) were partially immunized and 27(39.7%) have not immunized.

Table: 2. Age wise distribution of Immunization status

Age ranges (in months)	IMMUNIZATION STATUS			Total
	Fully Immunized	Partially Immunized	Not Immunized	
<= 5.00	56 (40.3%)	27 (19.4%)	56 (40.3%)	139 (100.0%)
5 - 8.00	82 (40.0%)	42 (20.5%)	81 (39.5%)	205 (100.0%)
8+	28 (41.2%)	13 (19.1%)	27 (39.7%)	68 (100.0%)
Total	166 (40.3%)	82 (19.9%)	164 (39.8%)	412 (100.0%)

Table no: 3. Gender wise distribution of Immunization status

Immunization Status	Sex		Total
	Male	Female	
Fully Immunized	111 (40.4%)	55 (40.1%)	166 (40.3%)
Partially Immunized	55 (20.0%)	27 (19.7%)	82 (19.9%)
Not Immunized	109 (39.6%)	55 (40.1%)	164 (39.8%)
Total	275	137	412

Gender wise distribution reveals that in the group of fully immunized, 111 (40.4%) were male and 55 (40.1%) were female patients. Similarly in the group of partially immunized children, 55 (20%) were male and 27 (19.7%) were female patients; while in non-immunized group, 109 (39.6%) were male and 55 (40.1%) were female children.

DISCUSSION

Studies conducted previously in Khyber Pakhtoonkhwa, Pakistan found immunization rates of 37.6% in a hospital setting and 65% in a rural setting.[8,9] Immunization rate in this study was comparable to that found by the study done in a hospital setting (40.29%; see fig.2) while in contrast the study done in rural setting.

Although in our culture male children are given more care and importance than females, in our study mothers of male and female children had better knowledge about vaccination schedule, although different results have been reported from Iraq's rural area where more females were immunized than males ($P<0.001$)[10] ; while wasif et al[11] from Egypt has reported higher immunization status in males than in females which is comparable to our study.

A study used focus group discussions with parents and service providers to evaluate the common obstacles in administering vaccines. They found that lack of awareness was one major factor and that parents were not strongly motivated to take out time and energy to have their children vaccinated, especially if facilities were not close at hand.[12]

Lack of motivation is the major factor cited by few studies. Awareness and improper funding were the predominant reasons cited by a clinic-based survey. Most respondents suggested educating the mother as the most effective way to promote immunization.[13]

Another study, conducted in a community in Karachi, demonstrated this practically, and was able to raise the immunization rate of the community by educating mothers.[14]

A study done in selected villages across Pakistan found that immunization coverage increased from 48% to 90% at the end of five years of continuous monitoring and education, and that the awareness levels of mothers was above 90% at the end of the study.[15] This further supports the argument in favour of awareness

being the most important step towards complete nationwide immunization. Although primary focus should be on education, it cannot be forgotten that the second concern was always a lack of facilities, and to this end, government and global agencies still have to improve policies for provision of vaccines.

Surprisingly, the overall incidence of all-cause diarrhoea was lower than expected and was similar between vaccinated and unvaccinated children, after stratifying by age. Additionally, the incidence decreased with time in all age groups and the total number of episodes decreased from 2007-2008. According to Aracaju's Public Health Department, acute diarrhoea incidence in the study area decreased from 59.8 - 52.5 episodes per 1,000 children during the two years this study was conducted and the higher incidence observed among the cohorts is likely reflects the increased sensitivity of active household surveillance, which identified mild cases that were managed at home, as previously described.[16]

The beneficial effects of the vaccine in young children have also been observed in Australia and Mexico[17, 18] and our data suggest that these benefits may extend to older children. When interpreting our data, however, it is important to consider that vaccinated children were younger than unvaccinated children. Although the stratified analysis suggests that the vaccine had better protective effect in younger children, this might still be due to the effect of the higher proportion of young children in the vaccinated group that was unaccounted for by the stratified analysis.[18]

CONCLUSION

Immunization status observed was not satisfactory. We need to work very hard for gross improvements. In order to gain our goals in the short term we need to use media like radio, television and newspapers effectively to increase the awareness, importance and effectiveness of immunization. The pulse polio days should be utilized as a good opportunity for the advocacy of immunization of children.

Awareness and public education about the importance of Immunization can be increased by organizing a month long awareness campaign about Immunization. In the long term we need to improve the educational level of not only our mothers but of the whole nation, by conducting health education programs in this regard.

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