MEDICAL CHANNEL

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COMPLICATIONS OF MEASLES IN HOSPITALIZED CHILDREN

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ABSTRACT:

Background: Measles is highly communicable disease and is still a common cause of child hood morbidity and morality. Incidence of complications is high in measles patients, especially in children < 5 years old and those who are malnourished. Keeping this is mind, this study was carried out.
Study Design: Descriptive Type.
Setting: Pediatric Unit II, Children Hospital, Chandka Medical College Larkana From 1st January 2010 to 31st December 2010.
Materials and methods: All patients who presented with symptoms and signs suggestive of measles according to WHO criteria were included in study. Information regarding Patients age, sex area, vaccination status, nutritional status, complications and outcome were noted in case sheets.
Results: Total 73 patients were studied, majority of children 47 (64.4%) are between 1-3 years of age and Females 41 (56.2%). Most of the patients are from Larkana 34 (46.5%) and Qamber area 21(28.7%). Great majority of patients 64 (91.8%) are non-vaccinated against measles. Regarding nutritional status, malnutrition is common 54 (74%) among measles patients. Pneumonia is commonest complication 59 (80.8%) and 2nd common complication is diarrhea 14(19.2%). Other less common complications are oral ulcers, eye ulcers, and encephalitis. Majority of patients improved 64(87.7%).

Key Words: Measles, Vaccination, Complications, outcome.

INTRODUCTION:

Measles is an acute highly communicable disease [1], is caused by RNA Virus of the genus morbilivirus in the family paramaxoviridae. Clinically measles is characterized by prodromal stage (high grade fever, coryza, conjunctives) and eruptive stage (generalized maculopapcular rash which spreads in descending pattern. It is more common in preschool age and spreads through respiratory tract by droplet spray, mostly during the prodromal period (7days before and 7 days after rash appears).

Measles is endemic throughout the world and epidemics occur in spring and winter season [2]. The global incidence of measles is 39.9 million cases 277,000 deaths and 28 millions disability adjusted life years [3]. In Pakistan, the estimated measles deathsare 81,000 annually among children under 5 year old [4]. Measles is highly associated with complications, approximately 30% of reported measles cases have one or more complications which are more common among children <5 years and adult> 20 years old [5]. Common complications of measles are pneumonia, diarrhea, stomatitis, inability to feed, otitis media and encephalitis [6]. Pneumonia is the commonest complication of measles [7]. It is also leading cause of childhood blindness in developing countries [8]. Measles is preventable disease and effective vaccine is available. Vaccine is given subcutaneously at the age of 9-15 months of age. Antibodies develop in 95% of children vaccinated at the age of 12 months of age and98% of children vaccinated at 15 months of age [9]. Passive immunization with immunoglobulin's is effective for prevention of measles within 6 days of Exposure.

Adequate immunization coverage results in considerable reduction of incidence, morbidity and mortality from measles [10].

In Pakistan measles vaccine is given at the age of 9 and 12 months. The vaccine coverage for measles in Pakistan is below 60% [7]. The main reasons for failure to vaccinate are lack of information and lack of motivation [11].

Low coverage and poor vaccine efficiency is strongly associated with out breaks of measles and its complications and hence high morbidity and mortality [12]. This hospital based study was carried out to see complications for which measles patients were admitted.

PATIENTS AND METHODS:

This descriptive type study was conducted at children hospital Pediatrics Unit-II, Chandka Medical college Larkana from January 2010 to December 2010. Children between 6 months to 15 years, who were hospitalized because of measles and its complications, were included in study. Children below six months were excluded because they were considered immune to measles because of maternal antibodies [13]. Clinical measles was diagnosed in patients with generalized maculopapular rash, fever, cough, coryza and conjunctivitis. Pneumonia was diagnosed by using IMNCI criteria of increased respiratory rate or infiltrates on chest x-ray. Central nervous system was considered involved if there was lethargy, unconsciousness, fits neurological deficit. Other problems of measles like diarrhea, oral ulcers, eye complications and otitis media were also notified in case sheets. Immunization status was assessed by examining immunization card or parental inquiry in this regard. Nutritional status was assessed by using Modified Gomez classification, patients whose weight was above 80% of expected were considered normal and weight below 80% of expected for age was considered malnourished. Investigations like chest X-ray, CSF DR, CBC, electrolysis were done where ever required. Approval from hospital ethical committee was sought and verbal consent was taken from parents for participation in this study.

Data regarding age, sex, immunization, nutritional status, complications and outcome is analyzed by using SPSS version 12 for windows. The result are expressed/ presented through frequency tables, charts or graphs.

RESULT:

73 cases of hospitalized children with measles were included in study. Majority of children 47(64.4%) are between 1-3 years age as shown in the table 1. Gender distribution of study showed that majority are females 41(56.2%) in comparison to males as shown in fig 1. Regarding area, majority of patients are from Larkana and Qamber as shown in table2. Regarding vaccination majority 64(91.8%) arenon vaccinated against measles Fig 2. As for as nutritional status is concerned majority 54 (74%) are malnourished as shown in fig 3. Regarding compilations, most common complications are pneumonia 59 (80.8%), and diarrhea 14(19.2%). Other less common complications are oral ulcers, eye ulcers, and encephalitis as shown in table 3, Majority of patients 64 (87.7%) improved and were discharged, as shown in fig 4.

DISCUSSION:

Measles is highly contagious disease with significant morbidity and mortality. Major epidemics have continued to occur over the last decade in many regions of the world. These epidemics have occurred in non-vaccinated children as well as in adults. Low vaccination coverage rates, receipt of less than two doses of

Fig1. Sex of measles patients (n=73)

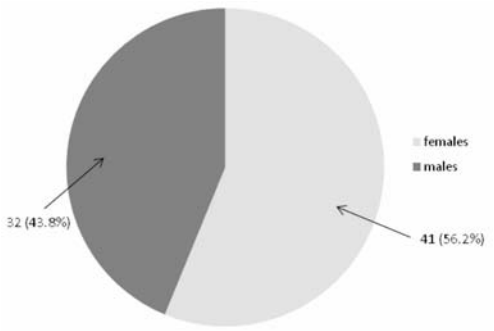


Fig 2. Vaccination status of patients with measles (n=73)

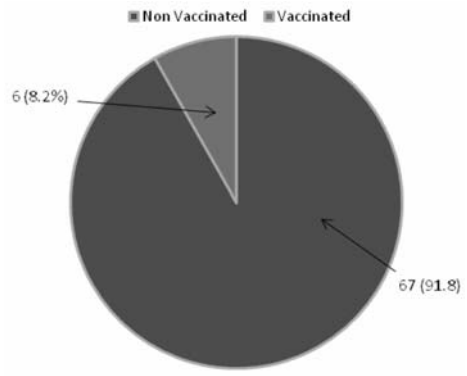


Fig 3. Nutritional status of patients with measles (n= 73)

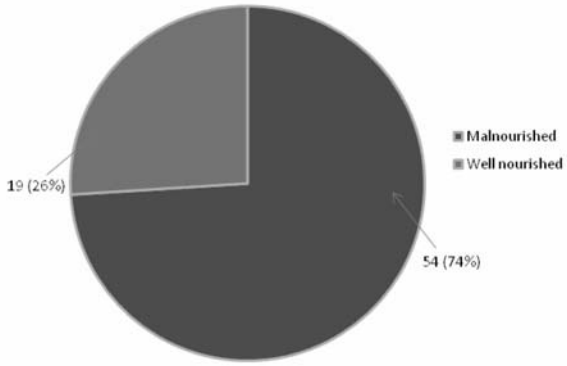


Fig 4.Outcome of measles patients. (n=73)

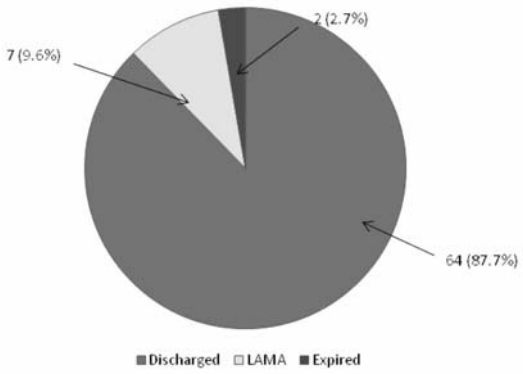


Table 1.
Age of Patients with Measles (no=73)

Age in months	No	%
9-12 months	9	12.3
1-3 years	47	64.4
3-5 years	12	16.4
5-10 years	5	6.9

Table 2:
Area wise distribution of measles patients (n=73).

Area	No	%
Larkana	34	46.5
Qamber	21	28.7
Dokri	4	5.5
Shikarpur	3	4.1
Shahdadkot	2	2.7
Kandhkot	2	2.7
Mehar	1	1.4
Dadu	1	1.4
Ratodero	1	1.4
Sugawal	1	1.4
Warah	1	1.4
Mirokhan	1	1.4
Kashmore	1	1.4

Table 3.
Complications in measles Patients. (n=73)

Complications	No	%
Pneumonia	59	80.8
Diarrhea	14	19.2
Oral Ulcers	7	9.6
Eye Complications	3	2.2
Encephalitis	3	2.2

measles vaccine, waning immunity and vaccine failure have been the main factors in the resurgence of measles [14].

In our study, out of 73 cases, majority 47 (64.9%) are between 1-3 years. This is similar to various other studies abroad and within country [6,7,8 16-19]. This indicates that children of this age group are still unprotected. Possible reasons are low vaccine coverage and vaccine failure.

In our study, females from predominant group 41(56.2%). This is in contrast to other studies in which males were predominant group [7, 16-19]. This may be because of less vaccination rates in females or malnutrition common in girls which have given rise to complications for which these children were brought here.

Majority of our patients 67 (91.8%) are non-vaccinated against measles. This is very alarming. In other studies vaccine coverage is also very low. In a study from Peshawar [19], only 50% of measles patients were vaccinated. Tarique P [7] has reported vaccination rate less than 60%. In another study from Peshawar [16],vaccination rate was 57.3%. The most recent data on EPI coverage evaluation survey 2006 [20] and Pakistan Demographic and Health survey 2006-2007 [21] also showed that only half of the targeted children were fully immunized with all antigens. Main reasons for failure of vaccination are limited access to services, lack of awareness of benefits of immunization, low socioeconomic status and parental education and management problems [22]. Risk of complications is higher in non-vaccinated cases. Vaccine is protective against occurrence of complications [23].

Majority of patients 54(74%) in our study are malnourished. Our results are similar to other studies. Khan A from Peshawar [19] has reported malnutrition in 66.8% in measles patients. Rehman AU[16] has also reported malnutrition in 71.3% of patients. The malnourished children experience more severe measles infection at greater frequency due to their altered immune response. [12] In our study pneumonia is most common complication 59 (80.8%). This is also reported in other studies [16-19]. Diarrhea is second most common complication in our study. Similar results were reported by Mohammad A [17],Qaiser I[18], and Khan A[19].

The outcome in measles patients is poor even in developed countries especially when it is associated with complications like encephalitis, sever pneumonia or diarrhea with sever de-hydration [24]. The mortality in our study is 2 (2.7%) which is almost similar to other studies done in Pakistan and India. The mortality reported by Khan A[19] was 8.1%, Mohammad A [17] has reported no mortality, while in Islamabad [25] it was 3.4%. In India mortality figures were 1-2% in endemic and 3.37 % in epidemic situation[26].

CONCLUSION:

In our study majority of patients 64% are between 1-3 years of age, 91.8% are unvaccinated, 74% are malnourished and pneumonia is the commonest complication 80.8% .

RECOMMENDATION:

Measles vaccine coverage should be increased by reinforcing routine immunization and organizing national immunization days for measles. Moreover complications of measles are common in undernourished children as compared to well-nourished children. Which can be solved by improving nutritional status of children.

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