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Original Research Article

Frequency of Complications of Measles Patients Admitted in Paediatric Ward Ayub Teaching Hospital (ATH) Abbottabad

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Abstract

Measles is a highly contagious disease caused by measles virus. Measles was responsible for millions of deaths annually worldwide before the introduction of the measles vaccines. The evidence of measles can be found from the 7th century. It was described by a Persian physician Rhazes in the 10th century as "more to be dreaded than small pox. Measles is still common in many developing countries including Pakistan. Before the availability of measles vaccines, 90% of children were infected before they reached 15 years. Measles is easily spread from person to person when the infected person talks, coughs or sneezes, the virus enters the air and enters the body through mouth and nose. The measles virus lives on contaminated surfaces and air up to two hours. Symptoms of measles include fever, skin rashes, cough, runny nose and white spots inside the mouth. This curriculum based cross sectional study was designed and selected as a convenient sampling technique to be carried out Paediatric ward ATH district Abbottabad. Data was collected by means of an interview-based questionnaire from the attendants, which was then computed into statistics using SPSS software and the results were interpreted. Children from rural areas were affected more as compared to children from urban areas. Pre-school children are affected more than school-going children of the same area. Vaccinated children as predicted were less affected than the non-vaccinated children because of their vulnerable immune system. Children who received vitamin A supplementation had a less severe form of the disease as compared to those children which were deprived of vitamin A supplementation during or before the infection. In this area, the measles vaccination rate was way below satisfactory; we need to improve vaccination of measles and other infectious diseases at least up to 80%. Children who were brought in a later stage of the disease had distinctly severe symptoms than those who were hospitalized in proper time. Measles infection is highly contagious and the patient must be isolated.

Keywords: Child health, Infectious diseases, Measles, Vaccination, vitamin A.

INTRODUCTION

Measles is an acute viral infection and contagious diseases. The evidence of measles can be found from the 7th century. It was described by a Persian physician Rhazes in the 10th century as "more to be dreaded than smallpox". The incubation period of measles was revealed by Peter Panum in 1846 after recovery from patients of this disease. Enders and Peebles isolated this virus from humans and monkeys in 1954. According to World Health Organization (WHO) 1,54,700 deaths occurred worldwide from measles in 2013 (Centers for Disease Control and Prevention, 2015).

Symptoms of measles include fever. The fever is usually of high grade, skin rashes, which may be generalized or on a particular part of the body, cough

which is of dry nature, runny nose and white spots inside the mouth. The symptoms of measles generally appear 7 to 14 days after infection. Symptoms generally appear earlier in young children as compared to adults. Children less than 5 years and adults more than 20 years most likely suffer from measles complications. Common complications are ear infections and diarrhoea. Severe consequences of measles include pneumonia, blindness, gastroenteritis etc (Rota et al., 2016). Measles is so contagious that if one person has it, 90% of the people close to that person who are not protected also become infected. It means measles spread rapidly in closed communities. Measles spread when the infected people cough or sneeze. The incubation period of measles is 11-12 days, and the average interval between the exposure and onset of rash is 14 days, with a range of 7-21 days. Monovalent measles vaccine is not available. Live attenuated measles virus vaccine is incorporated into combined Measles, Mumps and Rubella (MMR) vaccines. For prevention of measles, two doses of vaccines are recommended. 1st dose at the age of 12 months and 2nd dose at the age of 4 to 6 years (Demicheli et al., 2013). Investigations for measles include general Baseline Investigations (BLIs) including Complete Blood Count (CBC) etc. and specific tests. Laboratory confirmation is essential for all measles cases. Detection of measles specific Immunoglobulin M (IgM) antibodies and measles Ribonucleic Acid (RNA) by real time Polymerase Chain Reaction (RT-PCR). Serum sample and throat swab is taken to test for measles infection (Wichmann et al., 2009). Patients that don't have measles vaccination and vitamin A supplementation got severe complication as compared to those who got vaccination (Clemmons et al., 2015).

The samples should be obtained from formal patients with suspected measles, unless the local public health unit advises otherwise. Serum samples to detect immunoglobulin M and should be collected as soon as possible after symptoms start, and a convulse-cent sample taken 10–20 days later. To detect the virus, a nasopharyngeal swab should be taken within 7 days of thrash appearing (throat swabs or urine samples are also suitable).

People with measles infection are normally advised to rest, drink plenty of fluids, and take Paracetamol to treat the fever. There is no specific treatment. While a person is infectious with measles it is important that he or she remains at home to reduce the possibility of spreading it to other people (Perry et al., 2014).

Doctors, hospitals and laboratories, schools and childcare centers must notify cases of measles to the local public health unit. Public health unit staff will interview the doctor and patient (or careers) to find out how the infection occurred, identify other people at risk of infection, implement control measures (such as immunization and restrictions on attending school or work) and provide other advice (Bose et al., 2014).

The objectives of this study were to find out the frequency of measles in Paediatric ward Ayub Teaching Hospital (ATH) Abbottabad and to know the common complications associated with measles in children.

RESEARCH OBJECTIVES

To assess the complications of measles in Pediatric ward of Ayub Teaching Hospital (ATH)Abbottabad

MATERIALS AND METHODS

Study Design: It is a cross sectional study.

Population under Study: Patients admitted with measles, in the paediatric ward of Ayub Teaching Hospital Abbottabad.

Sampling Technique: Non probability convenient sampling of the Childs with measles admitted in Paediatric ward.

Data Collection Period: April to May 2018.

Data Collection Tool: Questionnaire with checklist for observation of patients with measles admitted in Paediatric ward ATH.

DATA ANALYSIS: SPSS

Inclusion Criteria

Childs admitted with measles in Paediatric ward ATH
Patients who gave consent were added in this study.

Exclusion Criteria

Outdoor patients were excluded
Patients who did not give consent were excluded.

RESULTS AND DISCUSSION

Children from rural areas were affected more as compared to children from urban areas (Figure 1). This difference in the stats might be because of less effective healthcare facilities in rural areas, the lack of formal education of parents and the lack of awareness in

Table 1. Age of child (months)

Months	Frequency	Percent
3	1	3.3
5	2	6.7
7	1	3.3
8	2	6.7
9	1	3.3
11	3	10.0
12	3	10.0
14	2	6.7
15	1	3.3
16	2	6.7
20	1	3.3
24	2	6.7
30	1	3.3
36	2	6.7
48	3	10.0
72	2	6.7
84	1	3.3
	30	100.0

Table 2. Shows if the child goes to school or not

Is the child going to school	Frequency	Percent
Yes	3	10.0
No	27	90.0
Total	30	100.0

Table 3. Shows whether the child is vaccinated or not

Measles vaccinated	Frequency	Percent
Yes	11	36.7
No	17	56.7
Don't know	2	6.7
Total	30	100.0

Table 4. Shows that the child is taking vitamin A or not.

Vitamin A supplementation	Frequency	Percent
Yes	6	20.0
No	22	73.3
Don't know	2	6.7
Total	30	100.0

Table 5. Shows the time when did the child diagnose

When did the child was diagnosed with measles	Frequency	Percent
Now	28	93.3
within last 3 months	1	3.3
Don't know	1	3.3
Total	30	100.0

Table 6. Shows family history

Any other child/children in home or nearby having measles	Frequency	Percent
No	20	66.7
Don't know	1	3.3
Brother	4	13.3
Sister	2	6.7
Cousin	3	10.0
Total	30	100.0

Table 7. Shows weather the child is pneumatic or not

Pneumonia	Frequency	Percent
Yes	27	90.0
No	3	10.0
Total	30	100.0

Table 8. Shows the child is having diarrhoea or not

Diarrhea	Frequency	Percent
Yes	19	63.3
No	11	36.7
Total	30	100.0

Table 9. Shows the child is having mouth ulcer or not

Mouth ulcers	Frequency	Percent
Yes	23	76.7
No	7	23.3
Total	30	100.0

Table 10. Shows the child is having eye complains or not

Eye complaints	Frequency	Percent
Yes	21	70.0
No	9	30.0
Total	30	100.0

Table 11. Shows the child is having ear complains or not

Ear complaints	Frequency	Percent
Yes	4	13.3
No	26	86.7
Total	30	100.0

Table 12. Shows the child is having encephalitis or not

Encephalitis	Frequency	Percent
Yes	3	10.0
No	27	90.0
Total	30	100.0

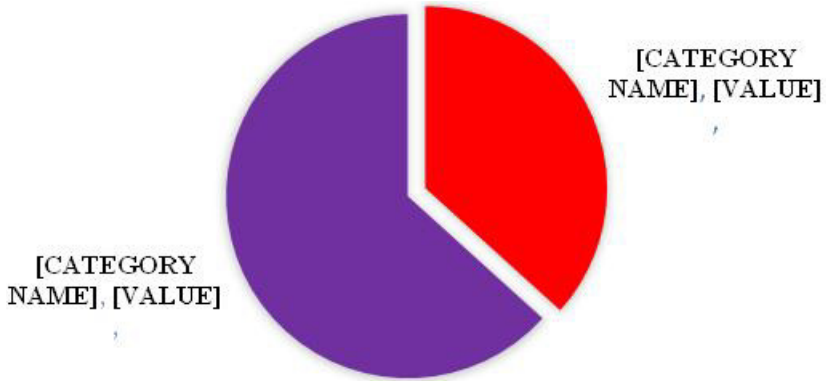

Figure 1. Address

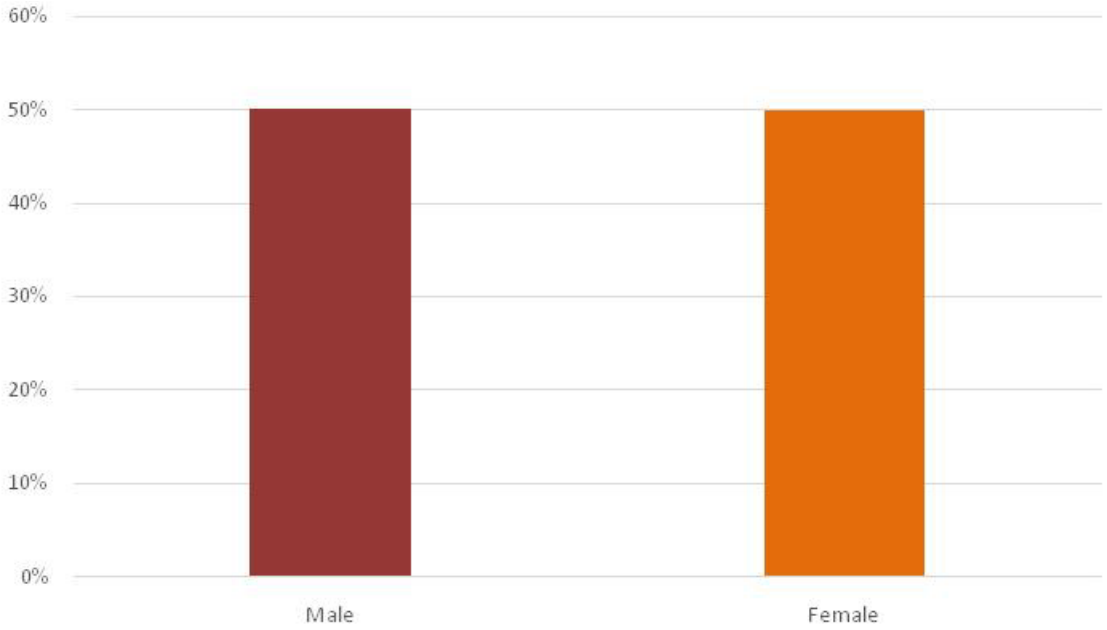

Figure 2. Gender

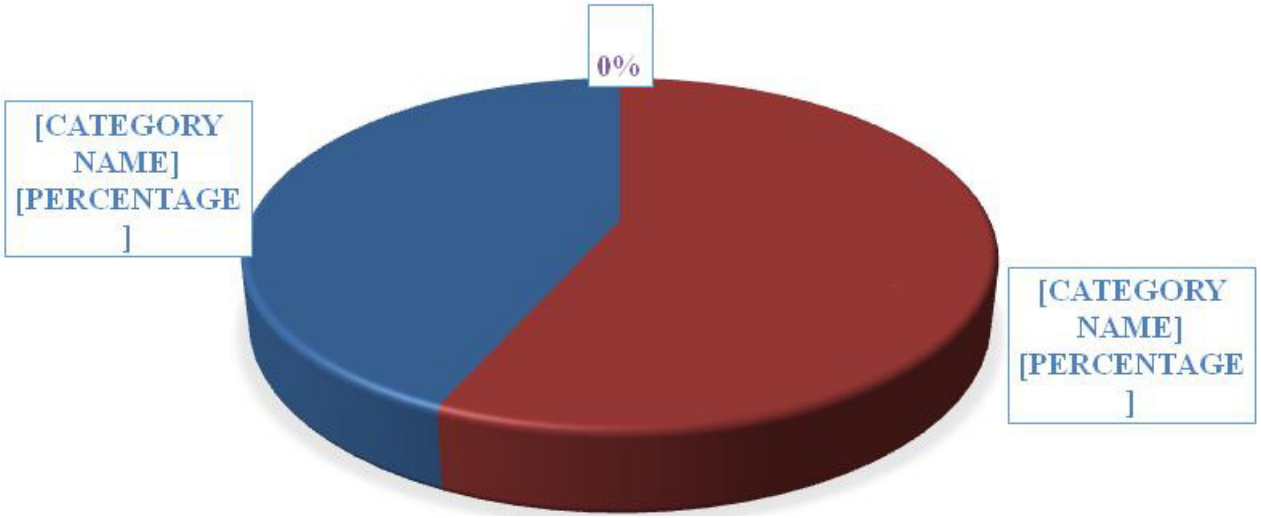

Figure 3. Father's education

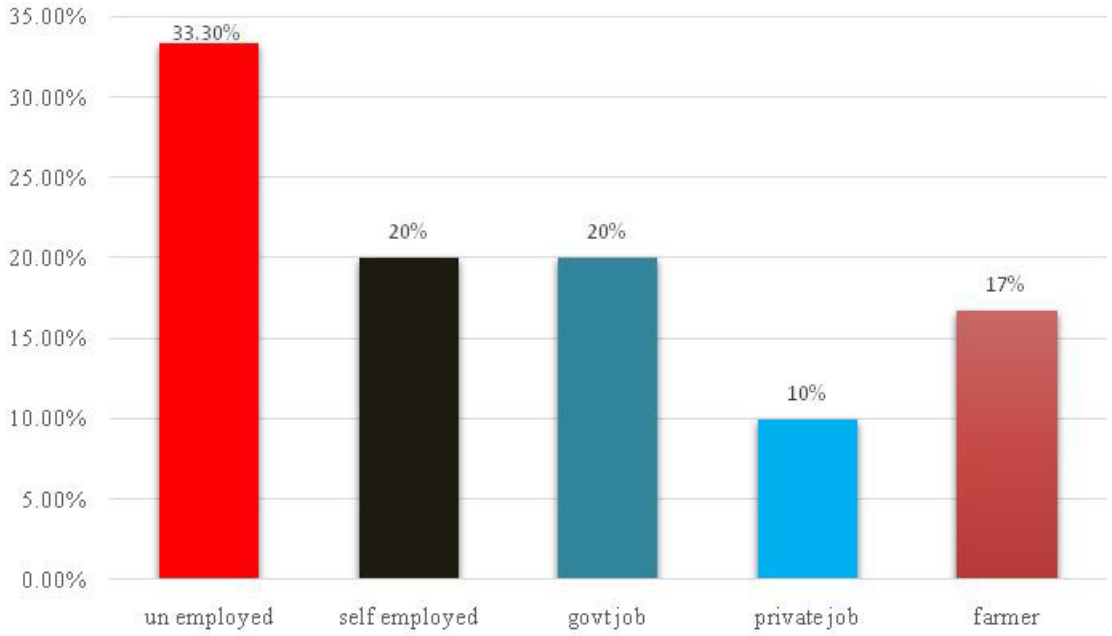

Figure 4. Occupation of the father

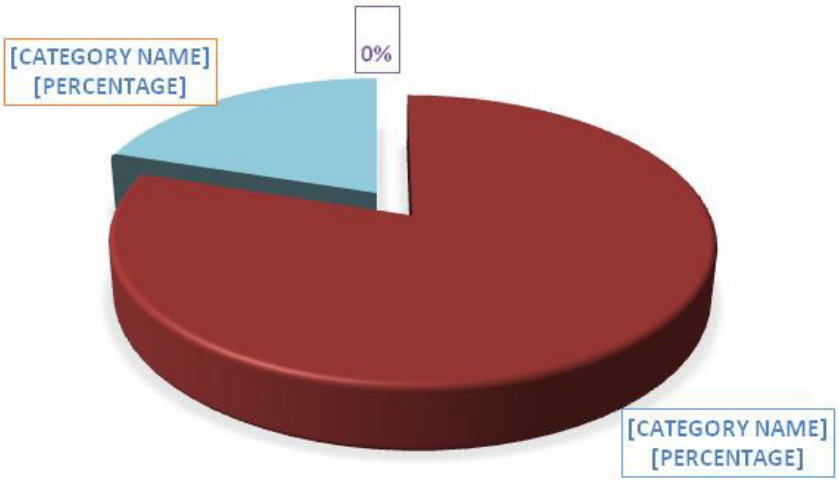

Figure 5. Mother's education

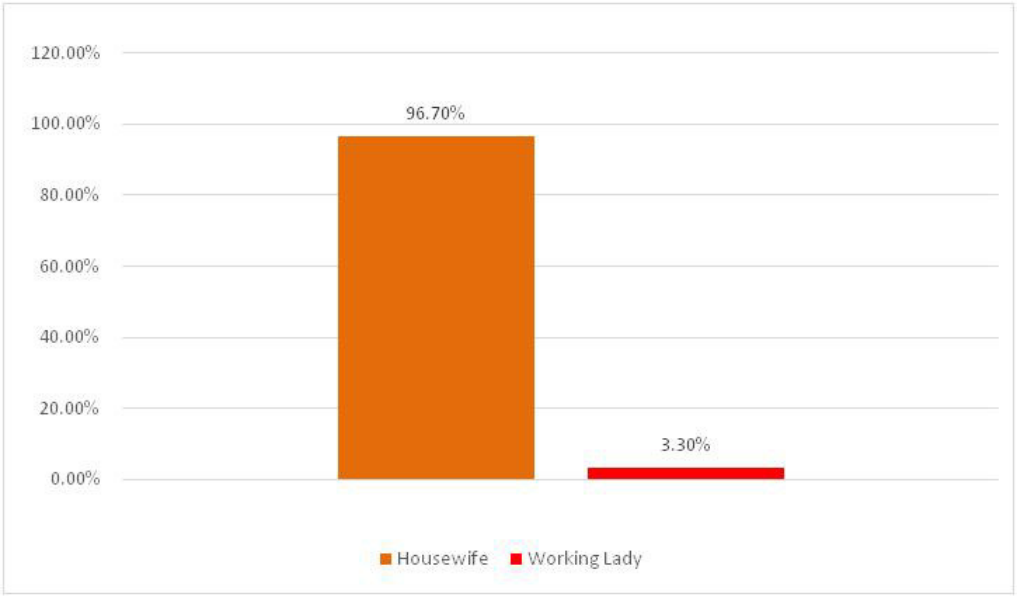

Figure 6. Mother's occupation

parents and children. This result is supported by other studies done in the neighbouring countries (Dasgupta and Morton, 2014). A cross-sectional study was undertaken in regard to educated parents and diseases development by fourth and final year students of Rawalpindi medical college and King Edward medical college, respectively. The study included paediatric departments of four tertiary care hospitals i.e. Holy Family hospital, Rawalpindi, BBH, Rawalpindi, Mayo hospital Lahore and Services hospital Lahore. Study was carried out for 45 days in the months of June-august. It was seen that 39% were vaccinated while remaining were not. Lack of awareness among parents was the main cause among non-vaccinated ones. They also included in their study the status of vaccination based on rural-urban settings and reached to a conclusion that rural areas present more cases in comparison with the urban areas. The presented cause was also lack of awareness among parents (Naqi et al., 2013).

Pre-school children are affected more than school-going children of the same area (Table 2). Other studies contradict this hypothesis (Schenzle, 1984). This difference might be accredited to the fact that in our country, most school-going children have already been infected with measles in their pre-school time. As measles infection occurs only once in a lifetime, those children when in school are immunized against measles and that might explain why school-going children are more affected in our sample.

Vaccinated children as predicted were less affected than the non-vaccinated children because of their vulnerable immune system (Table 3). To cross-check

Figure 1 with Table 3, we can safely deduce that vaccination is more common in urban areas as compared to rural areas where vaccination is less common and consequently measles is more common. This coincides with other studies done in developing countries (Bugvi et al., 2014). A similar research was carried out in Paediatrics Unit, Lady Reading Hospital Peshawar. 02 groups of 100 patients each was considered, first group being vaccinated and the second, un-vaccinated. The disease possibly developed in the prior due to low vaccine efficacy, loss of potency or improper way of administration or some other cause. Also, it was evident from the results that encephalitis and complications such as pneumonia, otitis media, diarrhoea and the like were so much more common in unvaccinated children, e.g., encephalitis cases were 11 in second group as compared to only one in first group (Mohammad et al., 2011).

Children who received vitamin A supplementation had a less severe form of the disease as compared to those children which were deprived of vitamin A supplementation during or before the infection. (Table 4). This result is supported by various studies done globally and nationally (Sudfeld et al., 2010). A cross-sectional study was carried out in Shivpuri, India on the same topic. Among these 18.3% were given measles vaccine and 28.9% given vaccine and vitamin A. VAS's role becomes more prominent when case management is poor. Both complications and case fatality rate were lesser in the latter (Mishra et al., 2008).

Pneumonia is a major complication of measles and the most commonly observed. A cross-sectional study was performed in Tikrit city of Iraq in Tikrit Teaching Hospital. 160 cases of measles were admitted between February 1st and end of July. Pneumonia was seen to be the most frequent complication and accounted for 63.32% cases and resulted in 3 deaths (Jasem et al., 2012).

Lastly we shall consider the death toll due to measles. In the above research, none of the cases resulted in deaths. Other studies contradict this hypothesis. It has been observed that measles may lead to mortality. A research was taken on to consider the death rate of measles in a rural area of Senegal, West Africa. In a four year period, 1500 cases of measles were registered and 98 resultant deaths. For children under 5 years, case fatality ratio was 9.6% (Ntshoe et al., 2013).

CONCLUSION

In this area, the measles vaccination rate was way below satisfactory; we need to improve vaccination of measles and other infectious diseases at least up to 80%. Children who were brought in a later stage of the disease had distinctly severe symptoms than those who were hospitalized in proper time. Measles infection is highly contagious and the patient must be isolated.

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