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Research Article

**MEASLES COMPLICATIONS IN HOSPITALIZED PATIENTS  
OF SERVICES HOSPITAL LAHORE**Dr Maryam Iqbal<sup>1</sup>, Dr Nureen Shahzadee<sup>2</sup>, Dr Dania Noor<sup>3</sup><sup>1</sup> Peoples's University of Medical and Sciences, Nawabshah<sup>2</sup> Woman Medical Officer, Indus Hospital, Lahore<sup>3</sup> King Edward Medical University, Lahore**Article Received:** June 2020**Accepted:** July 2020**Published:** August 2020**Abstract:**

**Background / purpose:** Study of complications of measles in hospitalized patients. Measles is common under the age of 5. It is transmitted by droplets through the respiratory tract, mainly in the prodromal period (7 days before and 7 days after the appearance of the rash). The measles outbreak occurs during the spring and winter season and is endemic worldwide. In Pakistan, the estimated number of deaths from measles is 81,000 per year among children under the age of 5. Measles is a common cause of immunosuppression which leads to complications. As the morbidity and mortality rate of measles is still very high, this study aims to investigate the complications of measles in hospitalized patients.

**Material and methods:** The study was conducted at the Pediatric Unit-II of Services Hospital Lahore for one-year duration from April 2019 to April 2020. Children aged 6 months to 12 years were included in the study. All patients hospitalized due to measles and its complications were included in the study. A total of 82 patients were enrolled in this study. As maternal antibodies protect children under 6 months of age, they were excluded from the study. Patients with measles were diagnosed with generalized maculopapular rash, cough, bark, conjunctivitis and fever.

**Results:** A total of 82 measles patients were included in the study. 63.5% of patients were aged 1-3 years. Men constituted 45.2% and women 54.8%. Most of the patients, 60.9%, had not been vaccinated against measles. Most of the patients (68.3%) were malnourished. The most common complications were pneumonia (84.1%) and diarrhea (26.8%). Mouth ulcers, otitis media, eye ulcers, and encephalitis were less frequent complications in this study. Most of the patients improved and were discharged home.

**Conclusion:** Pneumonia, diarrhea, mouth ulcers, otitis media, and encephalitis were the most common complications in this study.

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**INTRODUCTION:**

Measles is a viral disease and is more common in children under 5 years of age. It is transmitted by droplets through the respiratory tract, mainly in the prodromal period (7 days before and 7 days after the appearance of the rash). The measles outbreak occurs during the spring and winter season and is endemic worldwide<sup>1-2</sup>. The overall incidence of measles is 39.9 million, the total deaths are 777,000 and 28 million disability-adjusted life years. In Pakistan, the estimated number of deaths from measles is 81,000 per year among children under the age of 5. Measles is a common cause of immunosuppression, which leads to complications<sup>3-4</sup>. One in 20 children with measles has pneumonia. One in 1,000 will get encephalitis. Pneumonia, diarrhea, inability to feed, stomatitis, otitis media, and acute encephalitis are common complications of measles. The most common complication of measles is pneumonia. About 95% of children develop measles antibodies after vaccination at 12 months of age and 98% of children after vaccination at 15 months of age. Measles morbidity, morbidity and mortality are significantly reduced with an adequate number of vaccinations. In unvaccinated patients the risk of complications is greater than in vaccinated children. Malnourished children experience more complications and stay in hospital longer<sup>5-6</sup>. The significant proportion of deaths from measles in young children worldwide is due to low body weight for age. Measles is the most common cause of childhood blindness in developing countries<sup>7-8</sup>. In Pakistan, measles vaccination is lower than 60%. Lack of education and lack of motivation are the main reasons for vaccination failure in our country. Outbreaks of measles and its complications result from the low incidence and low effectiveness of vaccines, and thus high morbidity and mortality.

**MATERIAL AND METHODS:**

The study was conducted at the Pediatric Unit-II of Services Hospital Lahore for one-year duration from April 2019 to April 2020. Children aged 6 months to 12 years were included in the study. All patients hospitalized for measles or its complications were included in this study. A total of 82 measles patients were enrolled in this study. As maternal antibodies protect babies less than 6 months of age, they were excluded from the study. In this study, measles was diagnosed with generalized maculopapular rash, coryza, cough, conjunctivitis, and fever. Increased respiratory rate or chest radiograph infiltrates were diagnostic criteria for pneumonia in this study.

Encephalitis was diagnosed as lethargy, impaired consciousness, seizures, and neurological deficit. Diarrhea, stomatitis / oral thrush, eye complications, and otitis media were also reported in this study. The hx vaccination was taken from all patients and also noted on the vaccination card. The nutritional status of these patients was assessed according to the modified Gomes classification. Chest x-rays, cerebrospinal fluid tests, complete blood counts, and electrolytes were recommended if necessary.

**RESULTS:**

A total of 82 measles patients participated in the study. 63.5% of patients were aged 1-3 years. Men constituted 45.2% and women 54.8%. Most of the patients, 60.9%, had not been vaccinated against measles. Most of the patients (68.3%) were malnourished. The most common complications were pneumonia (84.1%) and diarrhea (26.8%). Mouth ulcers, otitis media, ophthalmic complications, and encephalitis were less common in this study. Many measles patients improved and were discharged home.

**TABLE 1: Age wise distribution of measles patients (n = 82)**

Age	Number	% age
7-12 months	10	12.2
1-3 yrs	52	63.5
3-5 yrs	14	17.0
5-12 yrs	06	07.3

**TABLE 2: Sex wise distribution of measles patients (n = 82).**

Sex	Number	% age
Male	37	45.2
Female	45	54.8

**TABLE 3: Complications of measles (n = 82)**

Complications	Number	% age
Pneumonia	69	84.1
Diarrhea	22	26.8
Oral ulcers	09	10.9
Otitis media	08	09.7
Eye complication	02	02.4
Encephalitis	02	02.4

**TABLE 4: Vaccination status of measles patients (n = 82)**

Vaccination status	Number	% age
Vaccinated	32	39.1
Non-vaccinated	50	60.9

**TABLE 5: Nutritional status of measles patients (n = 82)**

Nutritional status	Number	% age
Well nourished	26	31.7
Malnourished	74	68.3

**DISCUSSIONS:**

In our study, only 39.1% of patients were vaccinated, while 60.9% of patients were unvaccinated. Low vaccine efficacy, loss of immunity with age, loss of vaccine potency due to improper administration of vaccines, vaccine serotype, inadequate vaccination schedule, and sub-optimal vaccination coverage in the community are the main causes of increased measles incidence in Pakistan<sup>11-12</sup>. Similar results were also obtained by Tariq P, Aurangzeb et al. And Younas et al. In this study, the majority of patients were aged 1 to 3 years, which is similar to the results of various foreign and domestic studies. The most common complication in our study was pneumonia, which is similar to that reported in various national and international studies<sup>13-14</sup>. Diarrhea was the second most common complication; this has also been reported with about the same frequency in some studies. Other complications, such as mouth ulcers, ophthalmic complications, otitis media, and encephalitis, accounted for 10.9%, 2.4%, 9.7%, and 2.4%, respectively. Other studies have also found more or less the same complications<sup>8,13,18</sup>. In our study, women constitute an overwhelming advantage of 54.8%, while in other studies, men dominate. This could be due to fewer vaccinations in women or malnutrition, which is common in girls, which has led to complications in these children. In our study, many patients were not vaccinated against measles<sup>15</sup>. Tariq reported less than 60% of the vaccination rate, while Khan et al. From Peshawar reported that only 50% of measles patients were vaccinated. Rehman et al. From Abbotabad, the vaccination rate was 57.3%. The 2006 EPI Outreach Survey and the 2006-2007 Pakistan Demographic and Health Survey also found that only half of the children targeted were fully vaccinated with all antigens. In our study, the mortality rate was 3.6% and 89.1% completely improved and was discharged from hospital. In the report, Khan's mortality was 8.1%, while Mohammad did not report the mortality, and in Islamabad, according to Aurangzeb et al., It was 3.4%. In India, the death rate in an

endemic situation was 1-2%, and in an epidemic it was 3.37%.

**CONCLUSION:**

A common complication of measles is pneumonia, diarrhea, mouth ulcers, otitis media, and encephalitis.

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