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Research Article

**A DEMONSTRATIVE RESEARCH TO ASSESS THE  
LABORATORY AND CLINICAL FEATURES OF THE  
MEASLES AFFECTED ADULTS ALONG WITH THEIR  
COMPLEXITIES**<sup>1</sup>Dr Abdullah Sarwer, <sup>2</sup>Dr Nida Rasheed, <sup>3</sup>Dr Wajeeha Iqbal<sup>1</sup>Allama Iqbal Memorial Teaching Hospital, Sialkot.**Article Received:** December 2018**Accepted:** February 2019**Published:** March 2019**Abstract:**

**Objective:** The main objective of the study was to identify the patients of measles according to their clinical and laboratory results as well as their complexities.

**Methods:** The study arranged was of demonstrative type. The study was arranged at Mayo Hospital, Lahore from January 2017 to July 2017. In the study, many cases were identified suffering from Measles. The analysis was based on medical reports of the patients. These medical reports were further confirmed by identifying the Anti-measles Immunoglobulin M antibodies.

**Results:** Total 50 patients were observed during the study in which 41 patients were females. The average age of the patients was  $(25.52 \pm 4.07)$  years. We can identify the disease by following signs: High temperature and itchininess in 100% patients, depression in 98%, cough in 96%, nuisance in 88%, and pain in the throat in 72% patients. Some other signs of the disease were also observed such as Koplik acne, lymphadenopathy and hepatomegaly in 6%, 12%, and 4% sufferers considerably. Two most significant enzymes were also identified during the study of the patients which were Thrombocytopenia and eminent liver enzymes. These were identified in 52% and 44% sufferers of the disease. It was also noticed that the most frequently found complexity among patents was Pneumonia. Other complexities found among patients were bronchitis in 10% and laryngotracheitis in 12% sufferers. Of the overall patients, 18% showed otitis media. Out of 30% expecting females, early birth of baby occurs in 4% and spur-of-the-moment abortion in 6% females.

**Conclusion:** Measles continues to be a significant health hazard. Effective actions should be adopted to eradicate it.

**Keywords:** Measles, Adults, Complication, Pregnancy.

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**INTRODUCTION:**

Measles is a severe, communicable, agitated exanthemata's disease. It mostly follows the track of winterspring outburst. Its duration time is usually about 3 to 4 months. It may repeat its cycle after every 2 to 5 years. There is an effective vaccine available against measles but because of carelessness and less immunity in individuals. But still, it is the major health trouble all over the world. The most severe complexities found among measles patients were otitis media (7% – 9%), pneumonia (1% – 6%), diarrhea (6%), post-infectious encephalitis (0.1%), less-severe sclerosing panencephalitis (SSPE) (0.001%) and death (0.1% – 0.3%). In less severe cases, measles is a good forecast disorder. But the death rate of the patients is much greater in case of most severe complexities. The mortality rate is 3% to 5% or greater than this in emergent countries. In emerging countries, death and livelihood rates depend on various factors. These factors included the presence of the disease commonly less than one year in these areas and poor environmental condition. It also included inferior bacterial contagion. The recent study was organized to identify patients suffering from measles by their medical and laboratory tests and complexities.

**PATIENTS AND METHODS:**

The study arranged was of demonstrative type. The study was arranged at Mayo Hospital, Lahore from January 2017 to July 2017. After endorsement to the institutional ethics committee, the patients who were completely identified with the disease was then hospitalized. Patients were identified on the medical and serological basis.

A standard case description was used to authenticate the disease in persons. If the case is approved by laboratory or fulfils the standard case description it was considered as confirmed Measles case. The clinical case description consists of infirmity specified by itchiness which lasts for about 3 days, fever with a temperature of 101°F, and cough, coryza, conjunctivitis and Koplik spots on start day.

Patients suffering from severe measles complexities were sent to the hospital and were followed up in medical centres. Measles patients were observed to show some complexities such as hepatitis, pneumonia, otitis media, laryngotracheitis, abortion, preterm labour, encephalomyelitis, lymphadenopathy, gastroenteritis, bronchitis, anaemia, thrombocytopenia and neutropenia. Frequencies and ratios were used to articulate the explanatory information of analyzed features.

**RESULTS:**

Total 50 persons were analyzed in the study out of which 41 were females. The average age was (25.52 ± 4.07) years. The time period during which the patient stays in the hospital was about (6 ± 2.40) days. There was no person observed during the study which already had measles. Anti-measles IgM antibody was effective and showed good results in 100% patients.

The symptoms which were commonly found among patients were high temperature and skin allergy in all patients, malaise in 98% patients, cough in 96%, pain in head region 88%, and throat pain in 72% sufferers. The virulence results of the measles Koplik spots were present in 6% patients, lymphadenopathy in 12% and hepatomegaly in 4% patients.

According to the research in the laboratory, it was found that thrombocytopenia was present in 52% patients. It was also concluded through examination that liver transaminase altitude in 44% sufferers. Breathing complexities were also found to present in some patients such as pneumonia in 18%, bronchitis in 10%, and laryngotracheitis in 12%. Otitis media was present in 18% suffers.

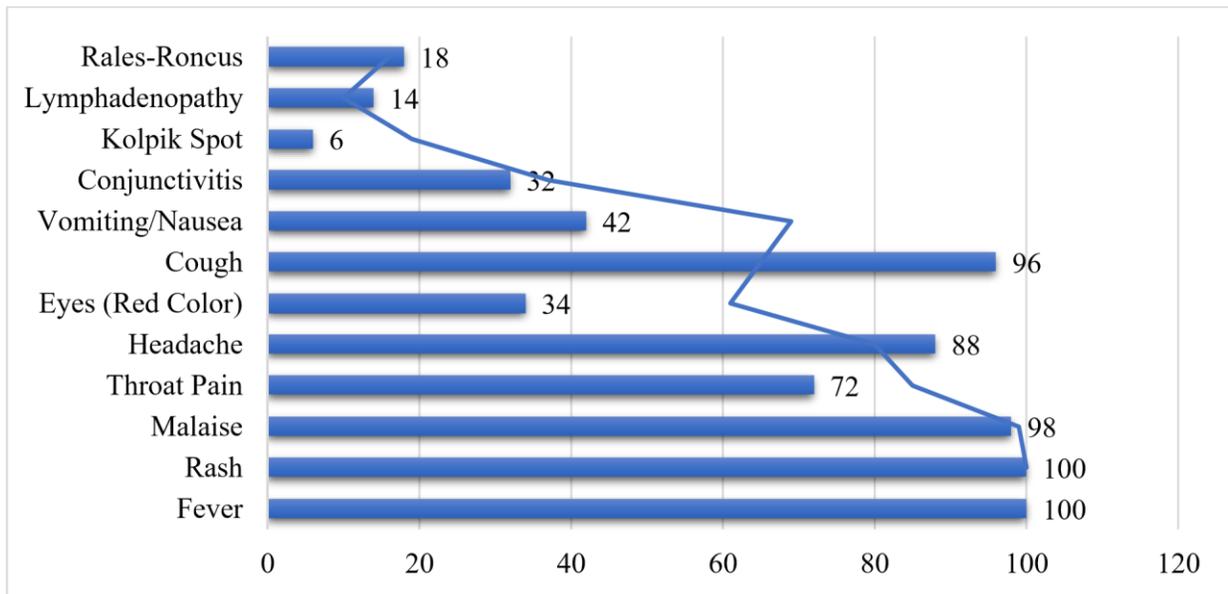
15 pregnant women were included in the study and were observed in clinics thoroughly. In these females, 2 were observed to have preterm pain. And in 3 females' early childbirth was observed.

The patients suffering from severe complexities or observed to have bacterial infections were given the proper medicines. In most harsh cases patients were treated with indicative and compassionate surgeries.

**Table – I:** Symptoms and physical results observed in patients suffering from measles

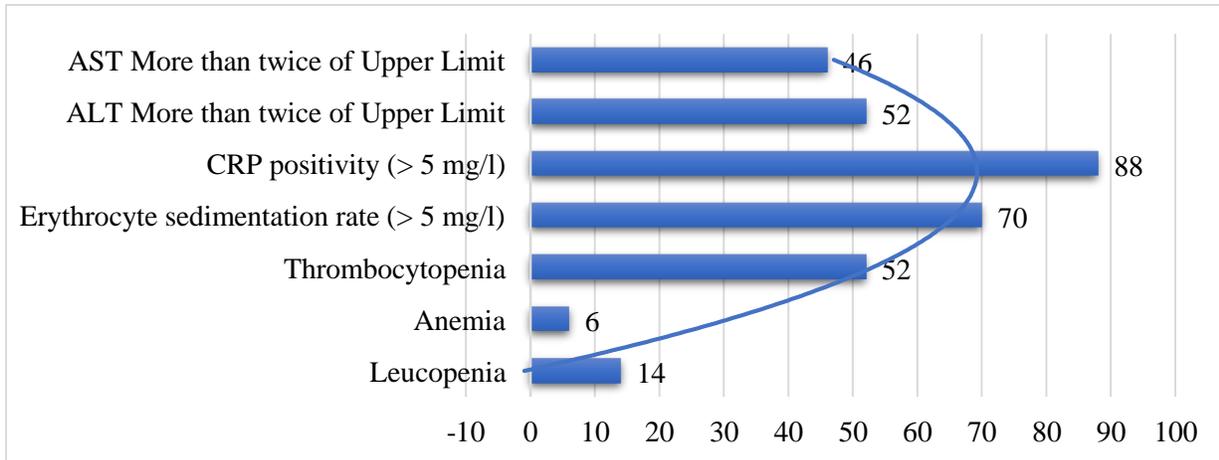
| Symptoms    | Percentage |
|-------------|------------|
| Fever       | 100        |
| Rash        | 100        |
| Malaise     | 98         |
| Throat Pain | 72         |
| Headache    | 88         |

|                  |    |
|------------------|----|
| Eyes (Red Color) | 34 |
| Cough            | 96 |
| Vomiting/Nausea  | 42 |
| Conjunctivitis   | 32 |
| Kolpik Spot      | 6  |
| Lymphadenopathy  | 14 |
| Rales-Roncus     | 18 |



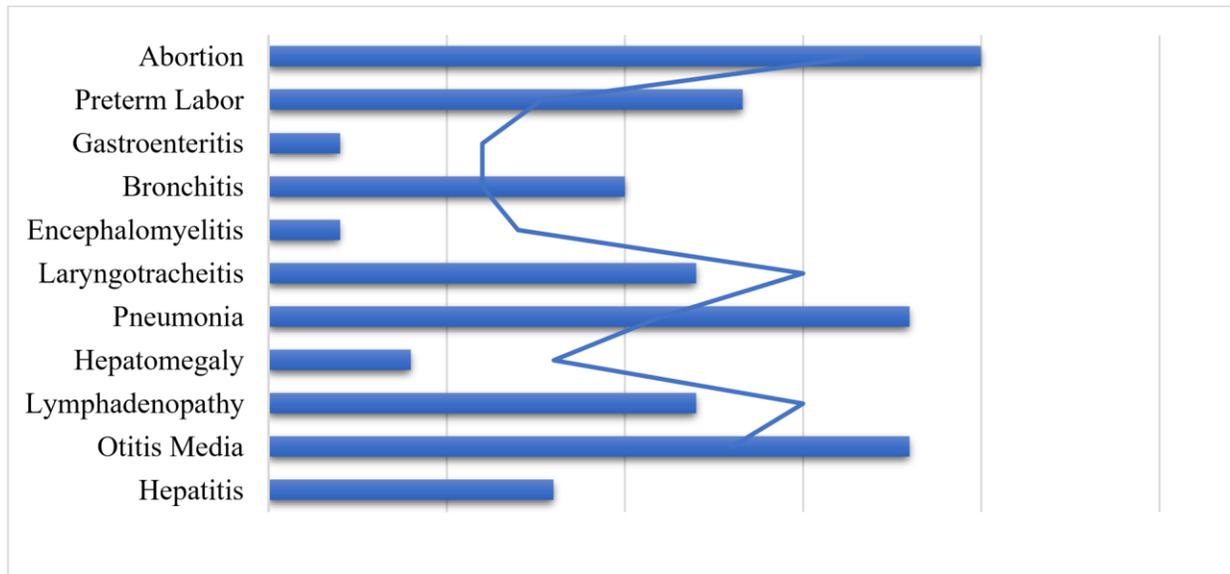
**Table – II:** Laboratory parameters observed in patients suffering from measles

| Laboratory Parameters                     | Percentage |
|---|------------|
| Leucopenia                                | 14         |
| Anaemia                                   | 6          |
| Thrombocytopenia                          | 52         |
| Erythrocyte sedimentation rate (> 5 mg/l) | 70         |
| CRP positivity (> 5 mg/l)                 | 88         |
| ALT More than twice of Upper Limit        | 52         |
| AST More than twice of Upper Limit        | 46         |



**Table – III:** Stratification of complexities in patients suffering from measles

| Complexities      | Percentage |
|-------------------|------------|
| Hepatitis         | 8.0        |
| Otitis Media      | 18.0       |
| Lymphadenopathy   | 12.0       |
| Hepatomegaly      | 4.0        |
| Pneumonia         | 18.0       |
| Laryngotracheitis | 12.0       |
| Encephalomyelitis | 2.0        |
| Bronchitis        | 10.0       |
| Gastroenteritis   | 2.0        |
| Preterm Labor     | 13.3       |
| Abortion          | 20.0       |



### DISCUSSION:

Measles is found everywhere in the world as a greater health issue. Its vaccine is available. Vaccination was started in 1985 on a habitual basis. Because of the use of vaccination among peoples decrease the chances of catching measles in population. As a result, the chances of measles reduced to a greater extent in younger persons. And a number of persons having antibodies less than avertable level in older persons has enhanced. No patient with the preceding measles vaccination was recognized in our study unluckily. Due to this reason primary or secondary vaccine disappointment was not identified.

Some feuds have occurred in different countries in the European region since 2005, according to the World Health Organization. In 2012 research was organized which recognized many feud cases in various countries of the world including Romania, Russia, Ukraine, Germany, Spain, Italy, Ireland and Belgium along with Iran, Iraq and Syria. If the individuals from these countries travel towards other countries, they carry their germs to those places and risks of disease enhanced. A statistical data was collected by the Health Ministry in 3 years from 2007 to 2010, 8 cases of measles were reported. However, in one year from 2010 to 2011 18 numbers of sufferers increased from 18 to 111. At the end of 2012, the number of patients was more enhanced. At the end 6 months of 2013 its number increased to a devastating rate.

The most common symbols observed in measles patients were similar to those observed in previous studies in which adult measles cases were evaluated [1 – 5, 9 – 7]. However, the difference was observed in Koplik spots. In our study, it was present in 6% of cases in our observations but lesser in the previously

observed studies. The cause of its lower rate may be that the patients first try to treat their disease in the start to other medical centres and then came to our hospitals. So, our hospital becomes the third-level health centre after the postponement of some days. In our laboratory findings, thrombocytopenia was found to be the most severe complexity. But the most severe thrombocytopenia which can cause blood loss was not identified. In 44% of patients according to our observation liver transaminase were prominent. In our study transaminase elevation was observed differently. Its elevation level was observed from 9% to 100% in various studies [5, 9 – 19]. The standards greater than ten times the highest perimeter of the ordinary range in liver enzymes in the cases have been assessed in favour of viral hepatitis. This stature has been institute at 8 percent. However, bilirubin addition or reduction was not found in any of our studies. In the observed studies, Transaminase elevation was found more commonly in young or adult age group. It was less common in children. It was supposed that this condition may be considered as a frequent conclusion of measles in respective age groups [19, 20]. This estimation is reported due to self-making results of hepatitis without any medical proofs. The other reason was that there was no association between the complexity of the disease and the elevation of liver transaminase.

Leukaemia is a virus causing disease and it is observed to be a commonly occurred complication. It was identified in 14% of patients of measles. Our results were also similar to the results of the previous studies [5, 9 – 15, 20]. Leucopenia is associated with apoptosis which occurs in normal cells. It originates after measles infection. It is traditional secondary to bone

marrow containment. According to our observations, white blood cells maintain their original shape and position within 2 weeks without any difficulty. Anaemia was not supposed to be a severe difficulty. It was identified in 6% of cases. Because out of the 50 patients selected 42 were women and 15 out of which were pregnant. Their laboratory results before measles were not available. Severe breathing complexities have been also commonly observed in measles patients. And these complexities were identified in a greater amount.

Measles viruses and bacterial infections cause destruction in epithelial cells and anomalous muscularity consent. It leads to rubble gathering in the path of air entrance and alveoli. Pneumonia infections in patients due to measles were found to be 2.4% and 26% in prior studies [5, 9 – 12, 14, 22, 23]. Additionally, it was also observed that the chances of any respiratory infections in adults were found to be greater as 52%. The rate of respiratory difficulties in our findings was steady with prose.

Osteitis is a common symptom of measles patients frequently present in children. In literature, the risks of otitis media because of measles complexities were found to be 0.8% and 7% [5, 9 – 11,14, 15, 22]. According to a recent study, the chances of otitis media were observed to be greater. This difference was due to the fact that in our cases the specific patients were selected for their treatment in hospitals. That's why they had one difficulty in order to be present in hospitals.

The chances of gastroenteritis complexities because of measles infection are seen greater in adults. It has been observed between 12% and 85% according to different studies. However, in some studies, it was also observed that in measles patients no gastroenteritis was found [5, 9 – 14, 16, 21]. This rate was found to be 2% in the case of our observations.

Encephalomyelitis which is the most severe complexity of measles has the incidence of 0.3% and 9.5% [5, 12, 25]. Encephalomyelitis was observed to involve in 11% deaths of the measles patients due to its severity. In our study, no death was observed due to encephalomyelitis and only one patient was observed suffering from it.

Measles requires a difficult treatment in case of expecting women but it cannot cause the hereditary disorder. But it has been reported that measles causes some severe issues in female such as damaging tissues in placenta, impulsive abortion, early birth, at the risks of 20% according to the development week at which the mother is attacked by the measles [1, 3, 21]. Out of 15 pregnant females suffering from measles, two early childbirth and three abortion cases were observed according to our study.

### CONCLUSION:

Measles is a severe health issue because of its complexities. Large-scale epidemiological studies are necessary to investigate some severe problems such as failure of primary and secondary vaccine failure, the prevalence of disease in spite of greater rates of vaccination and immunization.

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