



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**Available online at: <http://www.iajps.com>

Research Article

**A RESEARCH STUDY TO DETERMINE THE CAUSE OF
MEASLES AND RELATED PROTECTIVE MECHANISMS
ALONG WITH RELATED CONSEQUENCES**¹Dr Aqsa Shaheen, ²Dr Fatima Khawer, ²Dr Sana Ijaz¹Basic Health Unit Dharabi, Chakwal, ²Tehsil Headquarter Hospital Sambrial, Sialkot.

Article Received: March 2019

Accepted: April 2019

Published: May 2019

Abstract:

Background: Measles is a disorder commonly present in children. It can be protected by the proper use of vaccination. It can easily transfer from one person to another. It mostly occurred in progressing countries like Pakistan. It can even cause deaths because of its severity.

Objective: The reasons causing the measles, protective mechanisms of the patients, its severe reactions and consequences were noticed.

Material and Methods: We carried out this research at Jinnah Hospital, Lahore (March 2017 to February 2018). Total of 166 patients showing the symptoms of measles were admitted in the hospital. Different factors like age, gender, the standard of livelihood, the ability of self-protection and quality of food taken by the patients were completely observed. The severe conditions in measles can cause pneumonia, gastroenteritis, encephalitis, otitis media, condition after measles, dysentery and heart issues. The consequences of the patients were examined by assessing the conditions of liberation from the clinics, leave towards clinical prescription, referral and mortalities of patients. The data was examined by using SPSS.

Results: Out of 166 patients 93 were men and 73 were women. The average age of the patients were (3.72 ± 2.7) years. 117 patients belong to village area and 59 belong to city areas. 150 patients were already immunized by vaccination however 9 patients were not undergone vaccination. 59 patients gained nutritious and high-quality food. But most of the patients about 107 gained a less nutritious food. Pneumonia was observed in 72 cases. Gastroenteritis was examined in 37 patients. Encephalitis was recognized in 5 patients. Post measles state was recorded in 11 cases. Most of the patients were cured completely and discharged from the hospital. While mortality was observed in 9 patients.

Conclusion: Measles was mainly observed in children having the age of 1 to 5 years. These children were mostly not vaccinated. Most of the patients gaining poor nutrition were attacked by measles. So, every patient should vaccinate two times in a year.

Keywords: Measles, Immunization Status, Nutritional Status, Pneumonia, Encephalitis, Post Measles State.

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Please cite this article in press Aqsa Shaheen et al., *A Research Study To Determine The Cause Of Measles And Related Protective Mechanisms Along With Related Consequences.*, Indo Am. J. P. Sci, 2019; 06(05).

INTRODUCTION:

Measles is a prevalence of infectious disorder. It is a highly transferable disorder which can move from one patient to another. On an international level, about 40 million children were attacked by measles each year [1]. Measles act as endemic as well as an epidemic infection. Vaccination is the only way that protects the attack of measles. In near previous time, EPI program has varied regularly. In Pakistan, the vaccination of measles was given to the babies at the 9th and 15th month of their ages. It was declared by the American Pediatric Association that there is so essential protection from the measles in the toddlers below one year even if they were given the vaccine. The committee formed for the immunization practices in the United States advised to take two vaccinations of measles [2]. The age selected for the first vaccination was 12 to 15 months. The second vaccination was given at the age of 4 or 6 years. The vaccinations given before the 12 months of age were not measured as the part of course. Harmful reactions of measles vaccines are less severe and rarely occurred. At least the age of the child should be 6 months at the time of vaccination [2 – 4]. Currently, in Pakistan, different cases were measles were recorded with various actions and complexities. Measles contributes to about less than 5 deaths. It helps us in gaining a Millennium Development Goal. Measles has been considered as a frequently occurred infection in all over the world. It contributes to about 50-60% of the total deaths in the world annually [5].

It is frequently present in children of less than five years of age. It starts attacking after the 6 months of childbirth. Respiratory small drops play an important role in its transfer. First of all, itchiness appears on the body when the measles attacks on a person. After 5 to 6 days of infection dominates. The other symptoms of the infection are the cough, coryza, conjunctivitis, kop lick spot and period of maculopapular irritation. It can be identified by doctors by following the instruction and guidelines given by WHO.

For identification of virus responsible for measles cannot be separated by general methods. It can be diagnosed generally by PCR [6]. The severity of the

measles can cause pneumonia, diarrhoea and encephalitis. Immunosuppression can also occur within the patient so many kinds of the disease may be present in these patients. Compassionate administration can be frequently used. But the patients with severe complexities can be sent to the hospitals. Patients suffering from the measles can be given the supply of vitamin D. It was observed that the ingestion of vitamin D reduces the risks of deaths [7 – 9]. Demographic studies, defence mechanism, complexities and consequences of measles can be diagnosed from the different patients.

MATERIAL AND METHODS:

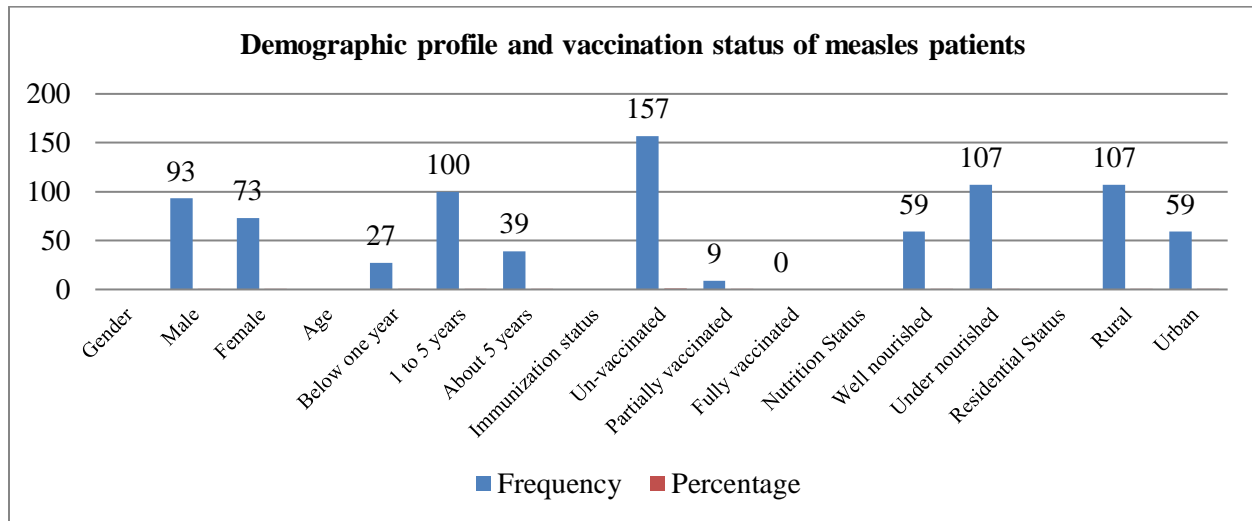
We carried out this research at Jinnah Hospital, Lahore (March 2017 to February 2018). Complete knowledge about the patient including age, gender, residential areas and food qualities were noticed. Pneumonia, diarrhoea etc were identified in patients in case of complexities. By using CSF and medical methods encephalitis was identified. In addition, some other characters like asthma, feverish hysterics, duration of residence in clinics, a manifestation of irritation during contagion, two times vaccination position, an indication of impulsive haemorrhage, perish, refer or LAMA were also identified. Ages of the patients between 6 to 14 years were added in the study. The data was assessed and measured by SPSS.

RESULTS:

During the eruption total, 166 patients were analyzed. 93 patients were male and 73 were female. Patients having ages between 1-5 years were 100 in number. 39 patients were observed having age greater than 5 years. The patients less than 1 year were also included in the study whose number was about 27. The average age of the patients was 3.72 ± 2.7 years. 59 patients with better gaining food were identified. Other 107 patients have a low quality of food. Most of the patients were not vaccinated. 157 patients were not vaccinated. Only 9 patients with the record of vaccine were present in the study. The vaccinated patients were vaccinated only a single time. There is no patient with double vaccination was observed during the study. Most of the patients were from village areas. Only 35.5% of patients belong to the municipal area.

Table – I: Demographic profile and vaccination status of measles patients

Demographic Profile	Frequency	Percentage
Gender		
Male	93	56%
Female	73	44%
Age		
Below one year	27	16.3%
1 to 5 years	100	60.2%
About 5 years	39	23.5%
Immunization status		
Un-vaccinated	157	94.6%
Partially vaccinated	9	5.4%
Fully vaccinated	0	0
Nutrition Status		
Well-nourished	59	35.5%
Undernourished	107	64.5%
Residential Status		
Rural	107	64.5%
Urban	59	35.5%

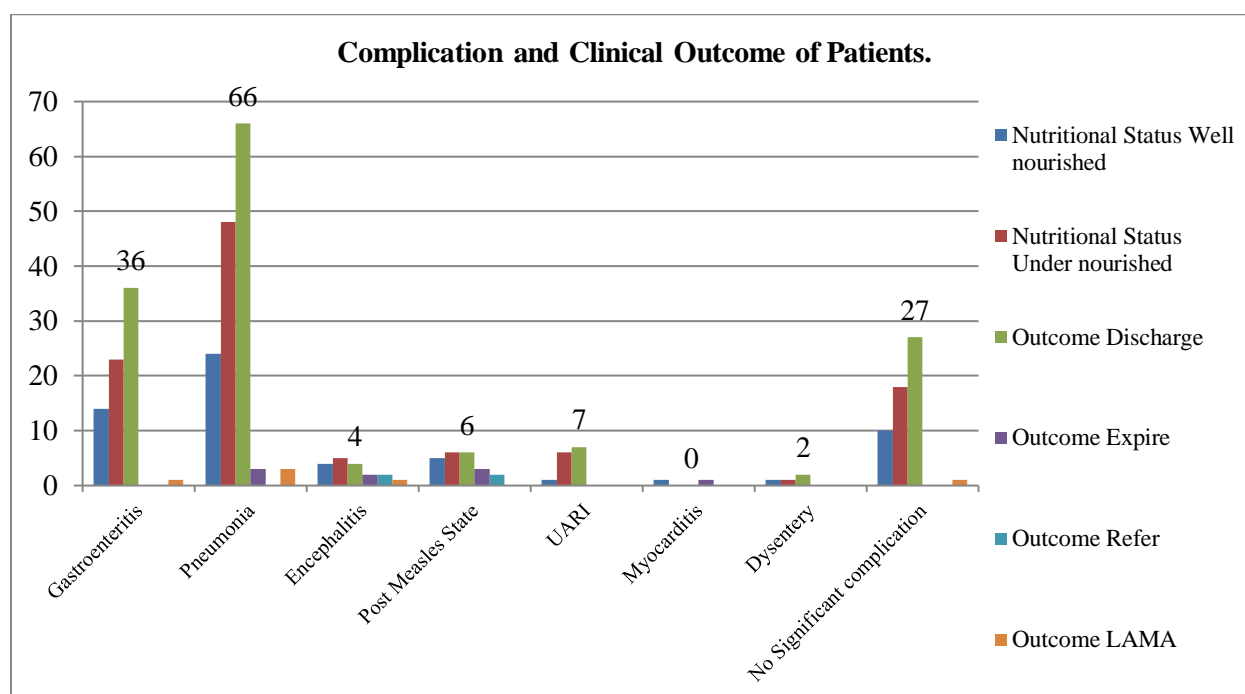


The most frequently found complexity was pneumonia present in about 72 patients. 37 patients were found to have gastroenteritis. Encephalitis was found to occur in 9 cases. After proper treatment and handling, 147 patients were discharged from the hospital. Only 6 patients were referred for LAMA.

And four cases were asked to get highly specialized treatment with advanced machinery. The mortalities of 9 patients were recorded out of 166 patients. The complexities found in the dead patients were pneumonia in 3, post measles state in 3 and myocarditis in 3 patients.

Table – II: Complication and Clinical Outcome of Patients

Complications	Nutritional Status		Outcome			
	Well-nourished	Undernourished	Discharge	Expire	Refer	LAMA
Gastroenteritis	14	23	36	0	0	1
Pneumonia	24	48	66	3	0	3
Encephalitis	4	5	4	2	2	1
Post Measles State	5	6	6	3	2	0
UARI	1	6	7	0	0	0
Myocarditis	1	0	0	1	0	0
Dysentery	1	1	2	0	0	0
No Significant complication	10	18	27	0	0	1



UARI: Upper Acute Respiratory Tract Infection.
LAMA: Leave against medical advice.

DISCUSSION:

Measles is the oldest known contagious disorder. It is found to present in the world for about 5000 years [10]. Vaccines against measles are also existing but it is still a highly prevailed disorder in mounting countries. Total 166 patients were added in the study according to the suggestions given by the Director General Health, Government of Punjab, Lahore. The ratio between males and females was recognized as 1: 27:1. It was more commonly found in males as compared to females [11, 12].

The mostly attacked age group was from 1 to 5 years. In the early age of the children, they get immunity

from the measles by the immunity gained from the mother [13]. Less defence mechanism of the children can cause measles. 95% of patients were not vaccinated which were present in the study. There were only 5% of patients who get attacked by measles even after the one dosage of vaccination. No patient with double vaccination was observed in the study record. In both the patients belonging to a village or city areas, no perfect vaccine exposure was found. Recently a study was arranged at Karachi. Greater than 80 patients of measles were recorded in the study. No patient with the vaccination was recognized in the study [14]. It was observed at Erbil city that in the measles patients more than 85 percent

were those who were not vaccinated [15]. The similar inclination of measles outbursts was identified in other areas of the world. These areas include Mirriah district in Niger and the Shivpuri district in India [16, 17]. The children who eat the food of low quality are more susceptible to the measles infection. They also faced more complexities in the infection as compared to the well nutritious food gaining persons. The duration of residence in the hospital was different in different patients. Less nutritious food causes a long stay in the hospital during infection as compared to well nutritious patients. Another study reported the similar consequences which were arranged at the Pediatric ward of Khyber Teaching Hospital, Abbottabad [18].

The most frequently found complexity was pneumonia occurred in about 43.4% of patients. It causes the death of about one-third patient of the measles. The same prototype of pneumonia was expressed in various studies where pneumonia was present in 16 to 77 percent and was occurred as a major complexity in measles on an international level [19, 20]. The second major severity occurred as a result of pneumonia was diarrhoea which was expressed in about 22.3% of patients. Same results of various studies were also reported in progressing states like Pakistan [19, 21, 22]. In 6.6% patient's severity in the form of post-measles was examined. According to one of the studies arranged in India, the percentage of post-measles severity was observed to be 29.6% [23].

According to the medical reports, only 5.4% of deaths were examined. This percentage was less than the statistical reports of studies arranged at Karachi. In Karachi, mortality rate was observed to be 9.5%. In Multan death rate was 8% [11, 14, 22]. Similar results were found at the Islamabad and KPK reports. This was about 5.17% and 5.8% accordingly [17, 22]. The death rate was higher in epidemics than endemic cases [24]. The case casualty rate was observed to be greater up to 25% [25]. Complexities of measles can cause a greater number of deaths in progressed and well-developed states too [26]. Greater number of mortalities was observed in patients suffering from encephalitis. The total number of mortalities occurred due to encephalitis were 22.2% as compared to 4.2% in case of severity in the form of pneumonia. The complexities of pneumonia in the form of encephalitis are very dangerous and cause the death of most of the patients suffering from measles [11, 14, 18, 19, 21, 22]. 27% of mortalities were also observed because of post-measles complexity [27]. Another significant factor causing the greater number of deaths was poor nutrition. Two

third of the total deaths occurred due to measles complexities were because of a less nutritious diet. This is a big contributing factor in mounting countries [11]. Greater than 80% of children got the vaccination of measles. But still, it is the major death causing factor in children having the age of less than 5 years. To control the measles prevalence the vaccination should be stronger and can cover the 90% or above toddlers in the start of their age. This can be achieved by increasing awareness among the masses about the dangers and costs of measles infection. National immunization project should aware the persons about the importance of the second dose of vaccination. Another impressive protection is the accompanying inoculation. But this is not comparable with the second dose of vaccination [28].

CONCLUSION:

Measles was commonly observed in children less than 5 years which were not immunized. Most of the mortalities in measles infection occurs due to the poor quality of food eaten by patients. It should be needed to get a vaccination of measles two times and cover the 90% population for inoculation. This can reduce the chances of measles.

REFERENCES:

1. Tariq P. Assessment of coverage level of single dose measles vaccine. *J Coll Physicians surg Pak* 2003; 13(9): 507-10.
2. Younas M, Iqbal I, Noreen N. Complications of measles and risk factors for mortality. *Pak Pediatric J* 2003; 27(1): 13-17.
3. VK Desai, SJ Kapadia, Pradeep Kumar, Siddhartha Nirupam. Study of measles incidence and vaccination coverage in slums of Community Medicine 2003, Vol. XXVIII, No.1: 10-15.
4. Singh J, Sharma RS, Verghese T. Measles mortality in India: a review of community-based studies. *J Comm Dis* 1994; 26:203-14.
5. Dietz V, Spika J, Kezaala R, Moshni E, Thapa A, Macfarland J et al. Update: global measles control and mortality reduction-worldwide, 1991-2001. *MMWR* 2003; 52: 471-75.
6. Henao-Restrepo AM, Strebel P, Hoekstra EJ, Birmingham M, and Bilius J. Experience in global measles control, 1990-2001. *J Infect Dis* 2003; 187(suppl): s15-s21.
7. Moss WJ, Griffin DE. Measles. *The Lancet*. 2012; 379: 153-64.
8. Mishra A, Mishra S, Jain P. Measles-related complications and the role of vitamin A supplementation. *Indian J Pediatric*. 2008; 75 (9): 887- 90.
9. Huiming Y, Chaomin W, Meng M. Vitamin A

- for treating measles in children. *Cochrane Database Syst Rev* 2005; (4):CD001479.
10. Sndfeld CR, Navar AM, Halsey NA. Effectiveness of measles vaccine and vitamin A treatment. *Int J. Epidemiol.* 2010; 39 Suppl: 148-55.
 11. Rehman A. Measles (Rubella). *Pak Ped Rev.* 2013; 1(1): 32-37.
 12. Qaiser I, Ahmed A, Ahmed F. Comparison of measles complications in well-nourished and malnourished children. *J Ayub Med Coll Abbottabad.* 2009; 21(2): 30-2.
 13. Mood BS, Naini RN, Salehi M. Immunity against measles among vaccinated school going children in Zahedan, Southeast of Iran. *Indian J Med Microbial* 2005; 23(4): 274-75.
 14. Maldonado Y, Measles. In Behrman RE, Kliegman R.M. Jenson HB, editors, Nelson's textbook of paediatrics. 19th ed. Philadelphia: WB Saunders. 2011: 1069-73.
 15. Khan M, Khan KMA, Ahmed A. Audit of Measles Cases in a Tertiary Care Hospital. *Pak Pediatric J.* 2013; 37(3):143-48
 16. Hamad K. Spectrum of Acute Complications of Measles in Erbil City. *Zanco J Med Sci.* 2010; 14(1): 22-27
 17. Nandy R, Handzel T, Zaneidou M, Bailey J, Cuddy RZ, Robert Perry, et al. Case-Fatality Rate during a CONCLUSION Measles Outbreak in Eastern Niger in 2003. *Clin Measles was found among unvaccinated children Infect Dis.* 2006; 42(3):322-8.
 18. Mishra A, Mishra S, Lahariya C, Jain P, Bhadoriya RS, Shrivastav D, et al. Practical Observations from an Epidemiological Investigation of a Measles Outbreak co in a District of India. *Indian J Community Med.* 2009; 34(2):117-121.
 19. Rehman A, Siddiqui T, Idris M. Clinical outcome in measles patients hospitalized with complications. *J Ayub Med Coll Abbottabad.* 2008; 20(2): 14-16.
 20. Aurangzeb B, Nisar-Y, Hazir T, et al. Clinical outcome in children Hospitalized with Complicated measles. *J Coll Physicians Surg Pak.* 2005; 15(9):547-51.
 21. Caksen H, Odabas D, Kose D, et al. Measles is still a severe problem in Eastern Turkey. *J Med Assoc Thai.* 2004; 87:386-8.
 22. Measles Vaccine 2 Dose in Routine Immunization Guide for Health Workers, with Answers to Frequently Asked Questions. Ministry of Health and Family Welfare Government of India 2010. Retrieved from: http://www.unicef.org/India/Measles_2nd_dose_in_routine_immunization-guide_for_health_workers_%28_English_%29.pdf
 23. Dabral M. Cost-effectiveness of supplementary measles immunization *Indian paediatrics* 2009;46 (11):
 24. World Health Organization (WHO) facts sheet updated February 2013; cited 2013 Oct 14. Retrieved from: <http://www.who.int/mediacentre/factsheets/fs286/en/index.html>.
 25. Bellini WJ, Rota PA. Biological feasibility of measles eradication. *Virus Res.* 2011; 162(1-2):72-9.
 26. Conference report. WHO position on measles vaccines. *Vaccine* 2009; 27:7219-21.
 27. World Health Organization. The immunological basis for immunization series: module 7: measles Update 2009.
 28. Katz SL, Hinman AR. Summary and conclusions: measles elimination meeting. *J Infect Dis.* 2004; 189: supply: S43-S47.