

Assessment of Incidence and Complications of Mumps at Sir Ronald Ross Institute of Tropical and Communicable Diseases (Govt. Fever Hospital), Hyderabad

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Abstract

Background: Mumps is an acute viral self-limiting disease which is highly contagious transmitted by droplet spread or by close personal contact. The classic mumps illness is characterized by fever and swelling of the parotid glands and may lead to various complications. Despite of availability of effective vaccination mumps still remains very prevalent.

Aim: This study has been done to observe the incidence and severity of mumps in relation to vaccination status and to assess complications.

Methods: Patients attending Sir Ronald Ross Institute of Tropical and Communicable Diseases (SRRIT & CD) during the period of 1 year (January, 2015 – December, 2015) patients with clinical signs and symptoms in accordance with the standard case definition of mumps were included for the study, Patients of all age groups and both genders were included .Statistical analysis was done and results were analyzed.

Results: A total of 626 number of mumps case were reported from SRRIT & CD hospital over a period of 1 year i.e., from January, 2015 till December 2015. Hence indicating that mumps still continues to be a major health concern in India. The majority of cases were found in the age group 0-15 years, slight male predominance was observed in our study. The data highlighted the fact that completely non immunize patient had mumps associated with complications.

Conclusions: Mumps is a significant disease in India therefore, it is essential to emphasize the inclusion of mumps vaccination in the National immunization program Moreover, it is also important to spread public awareness regarding hygiene, sanitation and isolation of mumps cases.

Key words: Mumps, Immunization, Orchitis

I. Introduction

Mumps is an acute infectious disease caused by paramyxovirus. This acute viral illness characterized by swelling of one or more of the salivary glands particularly the parotitis[1]. It is a highly contagious disease that early spreads by droplet or by direct contact. The complications of mumps include pancreatitis, orchitis, oophoritis, deafness, facial palsy, ascending polyradiculitis, myocarditis, cerebellar ataxia and mastitis[2],[3],[4]. Meningoencephalitis is a serious complication which can result in death or disability[6]. Prior to the widespread use of effective vaccine, Mumps was a leading cause of viral meningitis and the most common cause of unilateral sensorineural deafness in children. Mumps infection in pregnancy may result in spontaneous abortion during first trimester and aqueduct stenosis manifesting as congenital hydrocephalus in newborn [3]. Mumps remains a very prevalent viral disease and still is a major health issue in India and most cases go unreported.

II. Materials and Methods:

A total of 626 patients attending SRRIT & CD who satisfied the case definition of mumps were included for the study. This study was conducted for a period of one year from January, 2015 till December,

2015. The study included patients of all age groups and both sexes. Patients above 60 years, cases with suppurative parotitis and LAMA (Left against medical advice) cases were excluded from the study. Patient data was documented for each case in a prescribed proforma including patient's age, sex, clinical features and complications like orchitis, pancreatitis etc were also noted. The details like address, immunization status, history of exposure to contact, onset of symptoms, history of treatment were documented. The patients were clinically examined for the presence of relevant signs like parotitis to arrive at diagnosis. Routine laboratory investigations like liver function tests, Serum urea, Serum Creatinine, electrolytes, complete blood picture and ESR were done. Management included advising rest, prescribing antipyretics and analgesics, soothing swollen glands by applying ice packs. Patients were prescribed soft diet and were asked to avoid acidic food and beverages.

III. Results

A total number of 626 cases of mumps were reported in this study, maximum incidence was observed in the month of January (15.39%) followed by December (11.18%) as shown in Table 1 and Fig. 1. The study revealed that majority of mumps cases were in the age group 0-15 years as shown in Table. 2. In our study the incidence of mumps was slightly higher in males (50.64 %) as compared to females (49.36 %) shown in Table No. 3.

The most common complication seen was orchitis (8.3%) followed by tonsillitis (3.9 %). Pancreatitis (1.75%), febrile seizures (1.27%) and least common was myocarditis (0.95%). The complications are shown in Table No. 4 and Graph 2.

The Immunization status is shown in Table No. 5 and Graph3 it was found that only 12 adult patients (1.91 %) were completely immunized whereas immunization status of 45 patients (7.18 %) is not known and the rest non immunized 90.91 % . For statistical purpose patients whose immunization status was not known were also considered as non immunized. So the total 614(98.09%) patients were considered as non immunized. It is observed in this study that complications were seen only in non immunized patients as shown in Table 6.

TABLE 1: Month wise distribution of cases of Mumps for the year 2015.

Months	January	February	March	April	May	June
No of Cases	96	56	59	61	55	28
%	15.33	8.94	9.42	9.74	8.78	4.47

Months	July	August	September	October	November	December
No of Cases	18	28	59	42	54	70
%	2.87	4.47	9.42	6.70	8.62	11.18

Graph I: Month wise distribution of cases of Mumps for the year 2015.

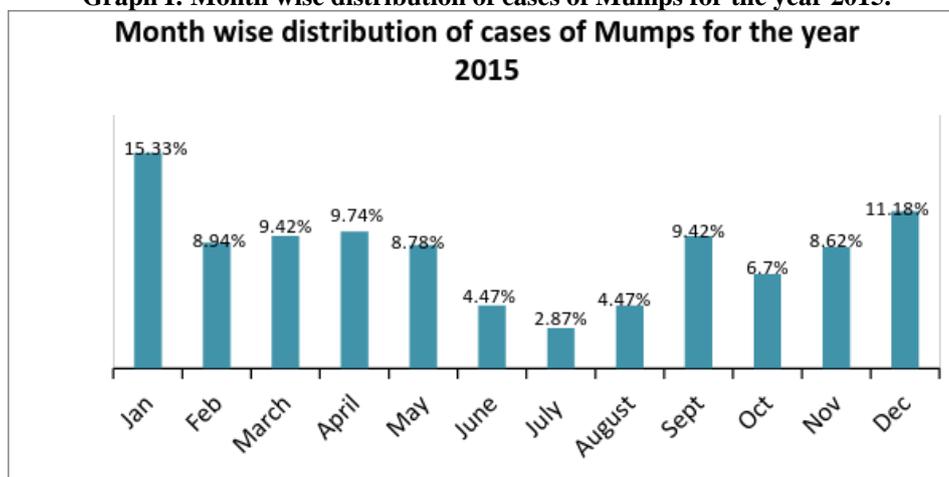


TABLE – 2: Age Wise Distribution of Mumps Cases

Month	0-15	16 - 30	30 and above	Total
January	44	39	13	96
February	29	15	12	56
March	33	16	10	59
April	38	18	85	61
May	42	9	4	55
June	14	10	4	28

July	15	3	4	18
August	20	5	3	28
September	35	16	8	59
October	23	15	4	42
November	29	20	5	54
December	35	24	101	70

Table III Gender Wise Distribution of cases of Mumps for the year 2015

Month	Male	Females	Total
January	53	43	96
February	28	28	56
March	36	23	59
April	27	34	61
May	25	30	55
June	14	14	28
July	10	8	18
August	12	16	28
September	28	31	59
October	23	19	42
November	25	29	54
December	26	34	70

TABLE NO. 4 COMPLICATIONS OF MUMPS

Complication	NO. of Cases	%	Immunization Status
Orchitis	52	8.30%	100 % Non Immunized
Tonsillitis	25	3.99%	100 % Non Immunized
Pancreatitis	11	1.75 %	100 % Non Immunized
Febrile Seizures	8	1.27 %	100 % Non Immunized
Myocarditis	6	0.95 %	100 % Non Immunized

Graph 2: COMPLICATIONS OF MUMPS

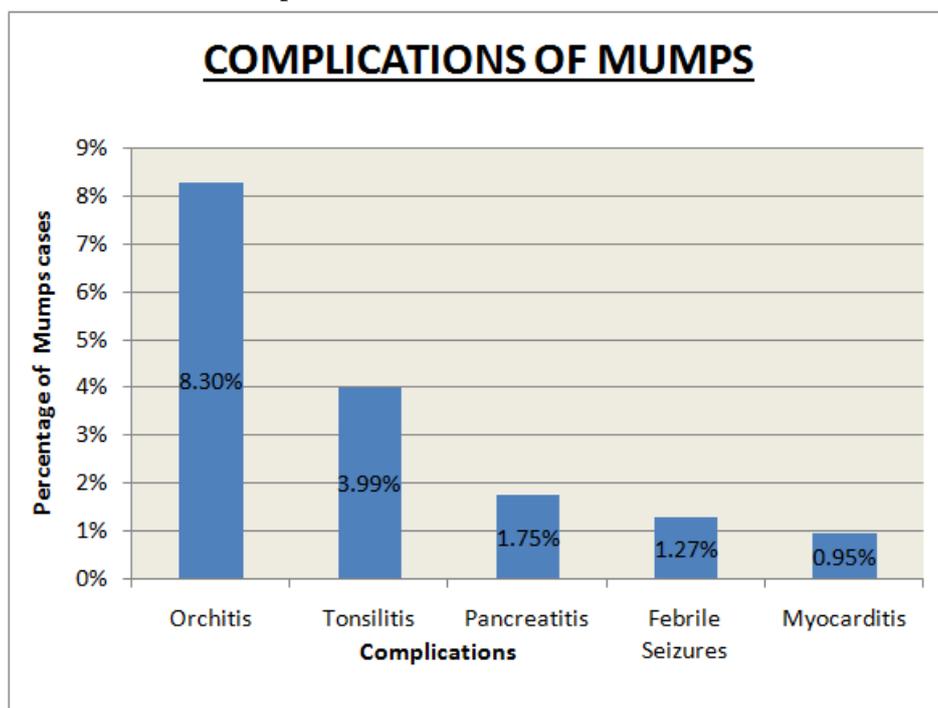


TABLE NO. 5 IMMUNIZATION STATUSES

Sl.No.	Status	Cases	%
01.	Completely Immunized	12	1.91 %
02.	Non Immunized	614	98.09%

Graph NO. 3 IMMUNIZATION STATUSES

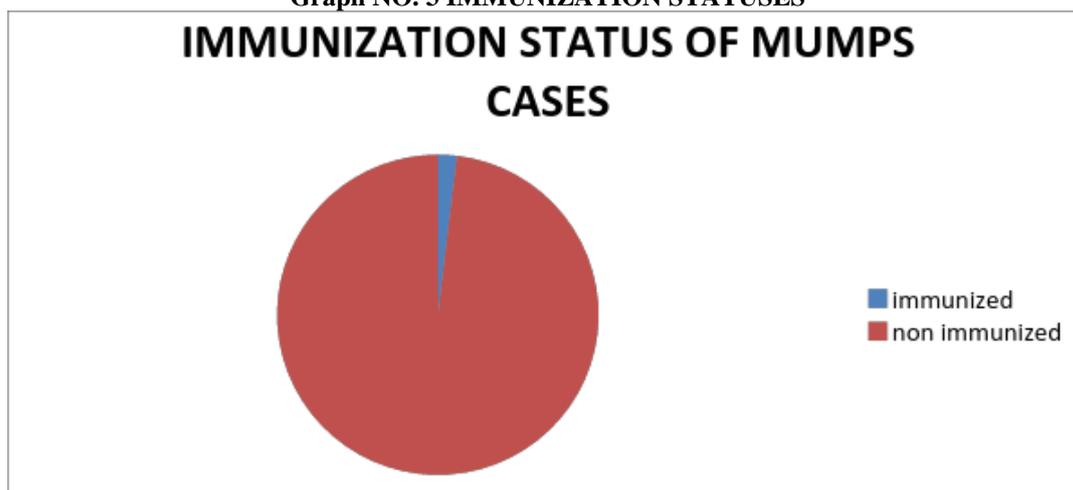


TABLE-6 Incidence of mumps cases with complications in relation to immunization status

Immunization status	Number of mumps cases with complications
Completely immunized	Nil (0%)
Not immunized	102 (16.29%)

IV. Discussion

Mumps continues to be a major health concern in a developing country like India. Despite being a widely prevalent disease, it is still considered as an insignificant public health problem. The main reason attributed to this is poor documentation of cases and lack of published studies. This results in false impression of less incidence.

The data presented highlights the fact that mumps contributes significantly to morbidity not only in children but also in adults. The reported cases may not reflect the actual number of cases as majority go unreported and many symptomatic may not seek health care and go to faith healers for advice and hence missed [1],[7].

In this study the incidence was highest among children below 15 years of age, slight predominance was seen in males. This was in accordance with few previous studies [8]. In developed countries incidence of mumps is more in adults. Similarly in our study 12(1.91%) adults with history of immunization in childhood had mumps. This is because of waning of immunity. Hence, this highlights the fact that not only mumps vaccine has to be included in national immunization program but emphasis should be given on booster dose as well. In the study by Sanjaya N Senanayake(4) 76% of mumps cases were adults. In this study 8.30% patients had orchitis, 1.75% had pancreatitis. In Study by Sanjaya N Senanayake(4) 30% of cases had orchitis 4% of the patients had pancreatitis.

Many previous studies have indicated that incidence of Mumps infection occurs during January to March each year. In our study the incidence varied with peak in January followed by December.

The study has revealed the fact that burden of Mumps remain high in India despite of availability of effective vaccine. Previous studies have highlighted that in countries which do not offer routine mumps vaccination have epidemic peaks every 2-5 years(8). Globally the incidence of mumps has reduced drastically in countries that have employed mumps vaccination in the immunization schedule. For example, Finland completely eliminated natural transmission of Mumps in 1996 (9).

In our study the main reason for the high incidence of Mumps not only in the pediatric age group but also in the adult age group is improper immunization Table No.5. Other contributing factors could be high population density and contact rates in schools and colleges.

Occurrence of repetitive mumps outbreaks in the community and epidemiological transition of disease affecting older age group with higher risk of complications emphasize on the need for effective vaccination policy of MMR vaccine in India. Although mumps is a benign self-limiting disease, possibility of missing complications remain. Epidemiological age shift and poor treatment practices can confer serious harm to the patients.(5)

Mumps a serious health concern in India, hence should be targeted for Control. Mumps vaccine need to be included in the National Immunization Program as Measles-Mumps-Rubella(MMR) Vaccine in place of Measles-Rubella (MR) Vaccine along with booster dose. Moreover the surveillance system of mumps cases need to be strengthened. It is also important to carry out routine surveillance to evaluate the impact of vaccination.

Strategies to improve people's health and hygiene practices further helps in reducing the incidence of Mumps. Upgrading Health Institutions is an essential step in preventing transmission of the disease. This type of hospital based studies will help in developing new strategies to reduce the number of Mumps cases and to plan for its elimination.

V. Conclusions

The results concluded that mumps poses a significant disease burden in India. Therefore, it is essential to emphasize the inclusion of mumps vaccination in the National immunization program . Moreover, it is also important to spread public awareness regarding hygiene, sanitation and isolation of mumps cases.

References:

- [1]. Vashishtha ,etal. Burden of mumps in india and vaccination strategies Indian pediatric volume 52 – june 15 ,2015.
- [2]. World Health Organization position paper mumps virus vaccines, wkly epidemiol rec, 2007;7:51:60
- [3]. Litman N, Baum SG Mumps virus. In: Mandell GL Bennets Je Dolin R(eds).Principles and Practice of Infectious Diseases; 6th ed, Philadelphia ; Churchill Livingstone,2003-2008
- [4]. Sanjaya N Senanayake , Mumps a resurgent disease with protean manifestations . MJA 2008;189: 456-459
- [5]. Bhatnagar et al. Introducing combined measles, mumps and rubella vaccine in chandigarh, India.
- [6]. Issues and concerns: Indian Pediatrics 2014; 51 : 441 – 3.
- [7]. Ghatage ST; Kakade GM “An outbreak of Mumps meningoencephalitis Sangli District Indian Pediatrics, 2007 : 44 : 235.
- [8]. Vashishtha VM etal. I AP perspectives on measles and rubella elimination strategies. Indian Pediatric 2014, 51 : 719 – 21.
- [9]. Galazka A, Robertsons, Kragher A Mumps and Mumps vaccine Global review. Bull Qtol. 1999. 77: 3-114.
- [10]. Peltola etal. Mumps and rubella eliminated from Finland JAMA 2000, 284 :2643-