



## INCIDENCE OF MUMPS IN HILLAH CITY IN IRAQ

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### ABSTRACT

A prospective study show incidence of mumps (viral parotitis) and its complications in al hillah city and among 175 patients between January 2017 to January 2018.

These patients presented to private clinic and Al Hillah general teaching hospital with symptoms and signs of mumps and its complications, history taken, clinical examination, treatment and follow-up done. Results : age incidence 5-15y was 58 cases (33.14%), 16-25y was 78 cases (44.62%), more than 25y was 39 cases (22.28%), sex: male:122 (69.71%), female:53 (30.28%), season: 130 cases between February and May (69.71%), prodromal symptoms:169(96.57%), unilateral parotid enlargement 119 (69.18%), bilateral 53(30.28%), submandibular enlargement 3(1.7%), MMR +ve 30(17.14%), complications 6(3.42%), orchitis 3 (1.7%), SNHL 2 (1.14%), meningitis 1 (0.57%).

### KEYWORD

SNHL: sensori-neural hearing loss, MMR: measles rubella mumps

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### INTRODUCTION

#### Mumps (epidemic parotitis)<sup>(1)</sup>

Mumps is an acute generalized paramyxovirus infection of children and adults. Mumps typically affects major salivary glands, is transmitted via the droplet route and has incubation time of approximately 14-18 days. Patients present with initial pyrexia, chills, and facial pain. The Parotids are typically bilaterally enlarged, although this may initially be unilateral. There is often swelling of the submandibular glands. Rarely sublingual is swelling. Orchitis may develop approximately four to five days after the onset of parotitis, typically only one testicle is affected, although occasionally there can be bilateral involvement. Mumps can give rise to lymphocytic meningitis, which can commence a few days after parotitis. Deafness is possible, but rare. Diagnosis of mumps is typically based upon the clinical picture, may be confirmed by detection of viral specific IgG and IgA. There is no specific treatment for mumps, analgesia and fluid intake being mainstay therapy. Corticosteroids may be effective for severe parotitis, also in orchitis<sup>(2),(3)</sup>.

#### MMR VACCINE (measles mumps rubella):

live attenuated virus vaccine. MMR vaccine prevent most, but not all mumps and complications caused by the disease. People who have two doses of MMR vaccine are about nine times less likely to get mumps than unvaccinated people who have the same exposure to mumps virus<sup>(4)</sup>.

### MATERIALS AND METHODS

This is a prospective study during January 2017 to January 2018, involved 175 patients, attended in the outpatient of E.N.T depart in Al Hillah General Teaching Hospital and private clinic suffered from signs and symptoms of mumps.

Initial patients work up questionnaire formula involved detailed history about symptoms included: fever, malaise, headache, Parotid enlargement, Submandibular gland swelling, and complications, testicular swelling and pain, hearing loss, etc. Then examination of head and neck done. Patients were advised follow-up for 2wks, included subjective assessment for symptomatic improvement and diagnosis of complications. Patients treated by analgesia and fluid intake, sometimes corticosteroids.

### RESULTS

- Age incidence :** In our study of 175 patients, the age ranged from 5 to 40 years old as: **5-15 YEARS** = 58 case (33.14%), **16-25 YEARS** = 78 case (44.57%) and more than **25 YEARS** = 39 case (22.28%).
- Sex incidence:** MALE = 122 (69.71%), FEMALE = 53 (30.28%), Male = female 2=1
- Season** 130 case (74.28%) between February and may
- Prodromal symptoms:** fever, malaise, headache = 169 case (96.57%).
- Parotid enlargement :** AFTER 3 DAYS OF PRODROME = 165 CASE (94.28%), unilateral = 119 (68%) Rt = 47

- (26.85%), Lt = 72 (41.14 %),bilateral = 53 (30.28%).
6. **Submandibular gland swelling** = 3 (1.7%)
  7. **MMR** = 30 case (17.14%) +ve, 90 case (51.42%) -ve 55 case (31.42%) not know
  8. **Complications** = 6 (3.42%), Orchitis = 3 (1.7 %) ? ,SNHL = 2 (1.14%), Meningitis = 1 (0.6 %) csf +

## DISCUSSION

### Age and sex:

In this study , 175 patients are complaining from mumps clinically diagnosed. The mean age in our study is 27.5 years old (most common age affected was 16-25 years).

Mumps peak age is 4 to 6 years of age and bilateral involvement is common<sup>(6)</sup>.

Also according to Ballenger (James B. Snow Jr, MD)<sup>(9)</sup>.

Incidence in male was more than females, male :122(69.71%),female : 53 (30.28%) that is in our study, In comprise to , a total of 1,557 cases of mumps were reported in the Netherlands; were male (59%) and 18-25 years of age (67.9%). The average annual incidence per 100,000 population was 0.5 for 0-3 year age group, 0.8 for the 4-14 years, 4.5 for the 13-17 year age 21.4 for the 18-25 year age , and 0.9 for the the >25 year age group<sup>(7)</sup>.

From 2001 to 2015, the incidence started to increase from fewer than 10 cases to more than 100 cases per 100000. The incidence rate was highest among males aged 15-17 years during 2013-2015, reaching 508.7 per 100000 persons<sup>(8)</sup>.

### Season:

130 case (74.28%) between February and may, presented in our study, comprised to most cases of mumps during September 1, 2009- August 31, 2012, instudy were reported in the Netherlands<sup>(7)</sup>.

### Prodromal symptoms:

Fever ,malaise , headache = 169 case (96.57 %) reported in this study, whereas Mumps may be subclinical in up to one third of the cases as by Hashimoto , Fajioaka M, Kinomaki H, et al study reports<sup>(9)</sup>.

Also Mumps usually preceded by a set of prodromal symptoms: low grade fever, headache, and malaise<sup>(10)</sup>. About one third of people with mumps have mild or no symptoms<sup>(11)</sup>. Mumps may be subclinical in up to one third of the cases and in these the first presentation may be the appearance of complications<sup>(10)</sup>.

### Parotid enlargement:

After 3 days of prodromal symptoms there is parotid gland enlargement in 165 CASE (94.28%), unilateral = 119 (68 %), Rt = 47 (26.85%), Lt = 72 (41.14 %), and bilateral = 53 (30.28%). In compare to , both glands involved in 75% of cases<sup>(9)</sup>, swelling on one side may precede swelling on the other by up to 5 days, Classic mumps is characterized by enlargement of the parotid and other salivary glands; parotitis is bilateral in three quarters of cases; and other salivary glands are involved in 10% of cases<sup>(12)</sup>, in our study submandibular gland enlargement incidence was 1.7% (3 cases).

### MMR(measles, mumps, rubella vaccine):

Study reported 30 case (17.14%) with history of +ve MMR, 90 case (51.42%) with no history of MMR vaccination, and 55 case (31.42%) not know whether taken or not.

Although vaccination for measles, mumps, and rubella(MMR) is now reducing the frequency of mumps and to some degree the clinical awareness of this condition, outbreaks still occur sporadically in the developed world. It remains a significant

problem in the developing world<sup>(13)</sup>.

MMR vaccine prevent most, but not all mumps and complications caused by the disease. people who have two doses of MMR vaccine are about nine times less likely to get mumps than unvaccinated people who have the same exposure to mumps virus. However, some people who receive two doses of MMR can still get mumps, especially if they have prolonged, close contact with someone who has the disease. If a vaccinated person does get mumps, they will likely have less severe illness than unvaccinated one<sup>(14)</sup>. In the U.S., studies show, the jeryl lynn strain of the mumps virus, says Aileen Marty, MD, a professor of infectious diseases at Florida International University, offers protection for 95% of people at , leaving about 5% of people vulnerable<sup>(14)</sup>.

### Complications:

In the study the incidence of complication of mumps was occur in 6 cases (3.42%) as follow: Orchitis in 3 cases (1.7 %), SNHL = 2 cases (1.14%), Meningitis in 1 case (0.6 %) with c s f + v e .

Compared to studies The incidence of SNHL after mumps has been estimated to be as high as 1 in 1000 in japan<sup>(15)</sup>.

The incidence of mumps related SNHL has been reported as 0.5-5/100000<sup>(16)</sup>.

Mumps deafness occurred in about 5 of every 10000 mumps cases and was usually unilateral mumps orchitis occurring in 20 to 30% of males<sup>(17)</sup>.

Aseptic meningitis is a complication in about 10 % of patients with mumps<sup>(17)</sup>.

An irreversible lesion of the 8<sup>th</sup> cranial nerve may be caused this neurotopic virus leading to unilateral or bilateral complete deafness<sup>(17)</sup>. Complications include meningitis(15 %), pancreatitis (4%)<sup>(18)</sup>.

Painful testicular swelling inflammation develops 15-40 % of men who have completed puberty and contract mumps virus. This testicular inflammation is generally one sided<sup>(19)</sup>.

Epididymo-orchitis occurs in about 25% of postpubertal men who contract mumps<sup>(19)</sup>. Up to 10% of patients can develop aseptic meningitis<sup>(20)</sup>.

Brain inflammation very rare, and fatal in about 1% of cases , profound but rare sensorineural hearing loss, unilateral deafness occur in about 0.005 % of cases<sup>(21)</sup>.

## CONCLUSION

High incidence of mumps in hillah city occurs among adults, male more than females, complications should be put in mind and diagnosed early to be controlled, people whom vaccinated by MMR may get mumps. Incidence of mumps high in spring.

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