Incidence of chickenpox and mumps in Karbala Governorate with their seasonal variation

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Introduction

Chickenpox is a viral disease caused by varicella zoster virus. The disease characterized by small, itchy blister skin rash. Symptoms start after 10–21 days after exposure to virus. The disease continues to about 5–7 days. Complications may occur in the form of pneumonia, encephalitis and secondary bacterial skin infection of the blisters. Severity of disease is more common in adult than children. Diagnosis of chickenpox is based on clinical background. Vaccination against varicella zoster virus infection usually occurs once. Vaccination against varicella protects about 70–90% of people from getting infection. Immunization schedule is usually recommended in many countries. Surveillance data reviled that 140 million cases of chickenpox and herpes zoster occur in 2013, also 6400 death result from infection with varicella in 2015. Geographical zone affects distribution of chickenpox, for example, in the temperate areas it usually occurs in a mild self-limiting form and the preschool children are mostly affected.

The epidemiology is different in tropical areas with the percent <60 of immunized adults. Iraq is regarded to be located within the temperate zone.

Mumps virus is the causative agent of mumps. The affected patient had fever, myalgia and generalized malaise. These symptoms are usually followed by painful swelling of one or both parotid glands. Incubation period is 16–18 days and symptoms continue for 10 days. Severity of infection is usually more in adults than children.

Mumps may be complicated by meningitis, pancreatitis, deafness and orchitis. Infection gives lifelong immunity. Diagnosis usually depends on the clinical sign and symptoms. Vaccination for mumps is included in immunization programs of most developed countries usually combined with measles and rubella.

Incidence of mumps increases in older age groups, those who have low immunization. Mumps occur usually during whole in around the equator, but it is more common during winter and spring in the southern northern areas. The current study aimed at following criteria:

1. Clarify the incidence of chickenpox and mumps.
2. Determine whether there is a need for chickenpox vaccine or not.
3. To clarify the effectiveness of mumps vaccine.

Materials and Methods

A retrospective descriptive study was applied. Collection of data for chickenpox and mumps during the year 2016 from Aon Primary Health Centre in Karbala province was performed. Total of 60,499 patients were included in this study.

All data were analyzed statistically using Excel 2010 and SPSS. Classification of age groups was done according to the surveillance system in Iraq.

Results

Total incidence rate for chickenpox was equal to 165.3/1000, while incidence rate for mumps was = 97.5/1000 (Tables 1 and 2).

The highest incidence rate for chickenpox according to age groups was among 5–9 years followed by 10–14 years. Seasonal variation was common during winter and spring for both diseases.

High incidence for both mumps and varicella zoster infection, in addition, most of the age groups affected were within 5–14 years.

Keywords chickenpox, mumps, varicella zoster, Karbala, incidence
Discussion

A high incidence rate for varicella infection clarified by this study compared to previous studies in Iraq. This result may be due to development of health sector that leads to more patients seeking of care, also in neighboring countries incidence was lower as in Saudi Arabia and Turkey.

High incidence rate for varicella infection clarified by this study compared to previous studies in Iraq. The study reviled an incidence rate of 12.3/1000 varicella infection among age group >45 years, which is matter of concern because infection in adult is more severe than children.

Seasonal variation for chickenpox was more common during winter and spring because virus is affected by climatic regions, the lowest incidence occurred during summer and these finding confirmed by other studies. Gender distribution for both infections clarified high percent of male compared to female, which is similar to Hanan and Hassan, (2013) study.

Regarding mumps infection occurrence rate = 97.5/1000 was found which is also higher than other studies done in Saudi Arabia, Italy and France. Seasonal variation also occur with mumps virus as Iraq regarded a temperate region, most cases happened during winter and early spring, which is also the same result found by Almuneef, (2006) study. For age distribution of mumps cases, 5–9 years were mostly affected which revealed defect in coverage area of the vaccine.

Conclusions and Recommendations

The current study concludes that:

1. Occurrence rate of both varicella zoster and mumps are high in Karbala province compared to other countries.
2. Most of the cases occur at age group 5–14 years for both varicella zoster and mumps.

We recommend the following:

1. Wide surveillance study for chickenpox cases to evaluate the need of the vaccine.
2. Serological study for mumps cases is needed to evaluate the effectiveness and coverage area of the vaccine.
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Fig. 1 Distribution of chickenpox and mumps throughout the year.

Fig. 2 Incidence rate of chickenpox and mumps.
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References


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