Acta Scientific paediatrics (ISSN: 2581-883X)

Volume 7 Issue 3 March 2024

Opinion

MUMPS Resurgence in India and Preventive Strategies to Contain this Epidemic

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Received: February 12, 2024

Published: February 23, 2024

In India the government has just tided over a covid pandemic which was predicted by me in an 2013 article. The next epidemic which has not caught the authorities eye is The Mumps epidemic.

Mumps is spread from person to person by respiratory droplets. The Mumps virus is found in the saliva from up to 7 days before and 7 days after onset of parotid swelling The duration of maximum transmissibility is 1-2 days before to 5 days after onset of the parotid swelling Viral shedding before onset of symptoms and in asymptomatic infected individuals impairs efforts to contain the infection in susceptible populations.

In the prevaccine era, mumps occurred primarily in young children between the ages of 5 and 9 yr and in epidemics about every 4 yr. Mumps infection occurred more often in the winter and spring months. 185,691 cases were reported in the United States just after the introduction of the mumps vaccine. Following the recommendation for routine use of mumps vaccine in 1977, the incidence of mumps fell dramatically in young children and was seen in older children, adolescents, and young adults. Outbreaks continued to occur even in highly vaccinated populations as an outcome of primary vaccine failure with 1 dose of vaccine as a result of of under vaccination of vulnerable persons. After implementation of the 2-dose recommendation for the measles-mumps-rubella (MMR) vaccine to control measles, the total number of mumps cases declined further. 2001-2003, lesser than 300 mumps cases each year were reported. In 2006 the largest mumps epidemic In the past 20 yr occurred in the United States. A total of 6,584 cases occurred, 85% of them in 8 midwestern states. Twenty-nine percent of the mumps patients occurred among the age group of18-24-year-old, many of them were college students. During that epidemic, it was found that 4,039 patients with mumps in the 1st 7 months showed that 63% had received more than 2 doses of the MMR vaccine. Furthermore, numerous outbreaks of mumps have been reported in highly vaccinated populations in the United States, mostly among school going children. This phenomenon is globally reported as well. The greater number of mumps cases in vaccinated persons, can be a result of close contact providing intense exposure that may prevail against vaccine immunity and perhaps genotype mismatch between circulating mumps genotypes and those in the vaccine. The U.S. Centers for Disease Control and Prevention, the American Academy of Pediatrics, and the Health Infection Control Practices Advisory Committee recommend an isolation period of 5 days after onset of parotitis for mumps patients in both healthcare and community.

Immunization with the live mumps vaccine is the primary mode of prevention used in the United States. It is recommended as a component of the MMR 2-dose vaccine schedule, at 12-15 months of age for the 1st dose and 4-6 yr of age for the 2nd dose. If not given at 4-6 yr, the 2nd dose should be given before children enter puberty. For those traveling to the United States, 2 doses are administered in individuals older than 12 months administered at least 28 days apart. Antibody develops in 94% (range: 89-97%) of vaccines after 1 dose. Antibody levels attained following vaccination are lower than following natural infection. The median vaccine effectiveness of mumps vaccine after 1 dose of vaccine is 78% (range: 49-92%) and after 2 doses is 88% (range: 66-95%). Duration of effectiveness is ≥10 yr after 1 dose and ≥15 yr after 2 doses. During outbreaks, a dose given to the at-risk population was related

with enhanced outbreak control with significantly fewer cases in those receiving the 3rd dose compared with those not receiving it. whereas the 3rd dose appears to be a possible possible approach during an outbreak. MMR should not be administered to pregnant women or to severely immunosuppressive or immunodeficient or to severely immunodeficient or immunosuppressed individuals. HIV-infected patients who are not severely immunocompromised, because the potential for a severe infection from mumps risk for severe infection with mumps outweighs the risk for serious reaction to the vaccine. Individuals with anaphylactoid reactions to egg or neomycin be at risk for immediate- type hypersensitivity reactions to the. Persons with other types of reactions to egg or reactions to other components of the vaccine from receiving it. Acceptable presumed evidence of immunity to mumps now constitutes of 1 of the following: (1) documentation of appropriate vaccination at age 12 mo or older, (2) laboratory evidence of immunity, (3) birth before 1957, and (4) documentation of physician-diagnosed mumps. Evidence of immunity through documentation of adequate vaccination is defined as 1 dose of a live mumps virus vaccine for preschool-age children and adults not at high risk and 2 doses for school-age children and for adults at high risk (e.g., healthcare workers, international travellers, and students at post-high school educational institutions). All persons who work in healthcare facilities 2 doses of a live mumps virus vaccine for workers in healthcare born during or after 1957 should be administered to be adequately vaccinated against mumps. Healthcare employees with no history of vaccination against mumps and no other evidence of immunity should receive 2 doses, with >28 days between doses. Healthcare who have got only 1 dose of the vaccine should receive a 2nd dose. Because birth before 1957 is only presumptive evidence of immunity, healthcare facilities should consider recommending 1 dose of a live mumps virus vaccine for unvaccinated workers born before 1957 who do not have a history of physician-diagnosed mumps or laboratory evidence of mumps immunity. In India we are expecting an epidemic as routine immunization for mumps has been replaced by Measles and Rubella in order to eradicate Measles.

Despite this, the mechanisms of Mumps disease emergence are still Not fully understood, , and control measures heavily rely on reducing the impact of Mumps after their emergence. Strategies to deal with Mumps Proactively will require, along with continued public health investment, Increased focus on identifying the driving mechanisms that highlight The emergence of each Mumps epidemic and predictive modelling of how These drivers will promote or shape future Mumps emergence potential And/or risk. In order to Control the Mumps Outbreaks we should go for the vaccination strategy like the other Countries. These approaches are inherently multidisciplinary, and Require surveillance infrastructure, logistic support, financial input and Sentinel physician training during pre-pandemic Emerging infectious Disease outbreaks. We do advice that two doses of Mumps vaccine may be administered at 12-15 months and second dose 4-6 years .Despite these results, modeling supports the current 2-dose schedule without a routine 3rd booster dose because the current regimen significantly controls size of outbreaks, severity of disease, and number of hospitalizations, whereas the 3rd dose appears to be a possible strategy during an outbreak. During an outbreak, healthcare facilities should strongly consider recommending 2 doses of a live mumps virus vaccine to unvaccinated workers born before 1957 who do not have evidence of mumps immunity [1,2].

Reports from many districts from Kerala especially Malappuram and Kozhikode since the past 5 months have reported 6348 cases. Complications include acute pancreatitis and neurological complications like encephalitis, and aseptic meningitis. With a large number of school outbreak and avalanche of cases in the periphery and there is no adequate reporting mechanism.It is highly likely that Mumps is underreported.

Bibliography

1. Cochi S., *et al*. "Perspectives in the relative resurgence of mumps in the United States". *The American Journal of Diseases of Children* 142 (1988): 499-507.

2. Rubin SA. Mumps vaccine. In: Orenstein WA, Offit PA, Edwards KM, "Plotkin SA Vaccines. 8th edition". Philadelphia, PA: Sanders/Elsevier (2023):711-736.e10.