

Rapid communications

MUMPS OUTBREAK ON THE ISLAND OF ANGLESEY, NORTH WALES, DECEMBER 2008-JANUARY 2009

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Twenty-three cases of clinical mumps in young people have been reported in North Wales over a five-week period since late December 2008. All cases have social links, and most of them have received two doses of mumps-containing vaccine.

Since 27 December 2008, the North Wales Health Protection Team of the National Public Health Service for Wales has been notified of 23 cases of clinical mumps. The onset dates are shown in the Figure. The age range was 9-37 years with a median of 15-16 years, and similar numbers of males and females were affected. The cases are all linked via family or social groups.

Epidemiological investigation

The first case reported on 27 December was a student in Manchester where, as confirmed by the Health Protection Unit, a number of mumps cases have occurred among students in recent weeks. They received an increase in notifications in the first week of December 2008 which peaked in the second week of December, and it is plausible that the student was infected at this time. Transmission from this case probably occurred at a Young Farmers party held on Anglesey on the 27 December 2008. Members of two local Young Farmers groups were invited, comprising around 50 young people aged 13 to 27 years.

An unusual feature of this outbreak is that 20 of the cases had received two doses of the measles, mumps, rubella (MMR) vaccine and two cases had had one dose. The only unvaccinated case was a 37 year-old patient who was too old to have been offered MMR as a child. Most cases appear to be mild, with no reports to date of orchitis or other complications. MMR vaccine was introduced into the childhood vaccination programme of the United Kingdom (UK) in 1988. The mumps strain currently used in the MMR vaccine is

Jeryl Lynn. However, some of the older cases (over 17 years-old) in this outbreak will have received MMR vaccine containing the Urabe strain which was used in the UK from 1988 to 1992.

Laboratory investigation

One case was admitted to the district general hospital where blood for serology was taken. This was reported as negative for IgM against mumps virus, but positive for IgG with no evidence of recent infection. This sample was taken the day after onset of symptoms, and would have been too early to capture an IgM response. A convalescent sample has been requested.

Another case, who is a healthcare worker, had paired sera taken by the Occupational Health Department, which showed a rising titre of mumps antibodies and was therefore confirmed as recent mumps infection by the regional virology laboratory.

Salivary swab samples of the remaining 21 clinical cases have been submitted to the reference laboratory at the Health Protection Agency Centre for Infections (CfI) at Colindale. The results for three cases have been received to date and are as follows:

Case 1.

The samples were IgM-negative and IgG-positive (very high titre), possibly indicating infection. A repeat salivary antibody test has been requested to ascertain whether IgM titres have subsequently risen.

Case 2.

The samples were IgM-negative and IgG-positive, although the titre was not particularly high.. This is consistent with past immunisation, but does not allow confirmation of recent mumps infection. The patient's general practitioner notes that it was a very mild case of mumps.

Case 3.

The samples tested IgM-positive and IgG-positive (very high titre). Recent mumps infection is confirmed.

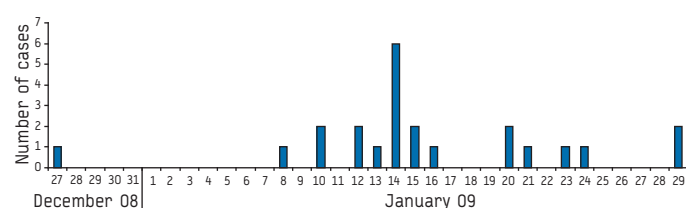
Two recent cases have been swabbed within 48 hours of onset, and their samples will be tested by PCR at the CfI reference laboratory.

Discussion and conclusion

Salivary swabs are usually submitted two weeks after notification of clinical mumps. In this outbreak blood samples have been taken in individual cases because of special circumstances. The

FIGURE

Epidemic curve, mumps cluster on Anglesey, North Wales, December 2008 – January 2009 (n=23)



laboratory results to date indicate that this is a genuine outbreak of mumps, although the timing of some of the samples may not have been optimal for capturing the antibody response.

This outbreak is different from the one described in Austria in 2008, where 49.1% of the young people affected had not been vaccinated [1]. However, in the Netherlands, a number of fully vaccinated individuals were affected as part of an outbreak in a predominantly unvaccinated community in 2008 [2].

Uptake of MMR vaccination has historically been high in Anglesey, and the majority of cases in the outbreak had received two doses. The lack of cases among unvaccinated individuals may reflect the high uptake of vaccine, and an investigation is ongoing to determine coverage rates for the birth cohorts involved. Current isolates from mumps cases in the UK have been identified as genotype G. Further tests are required in order to confirm that this is also the genotype for this outbreak.

The mumps component of the MMR vaccine does not provide the same high levels of protection as the measles and rubella components. One dose protects around 65% (62%-85%) of those who receive it [3]. A second dose raises the effectiveness to around 85%. This still leaves one in six recipients of two MMR doses vulnerable to mumps. This primary vaccine failure may be the explanation for this outbreak, but the contribution of waning immunity, secondary vaccine failure, must also be considered.

Infection control measures

Letters have been sent to the school many of the cases attend, advising that all children should ensure that they have received two doses of MMR vaccine. Letters have also been sent to general practitioners in the area alerting them to the fact that cases of mumps are occurring despite complete vaccination status, and preparing them for requests for MMR vaccination.

References

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