

Update on Current Mumps Epidemic and Considerations for Donor Deferral

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Background about the Epidemic

- As of May 4, 2006 a total of 2,869 mumps cases have been reported to CDC from 13 outbreak-affected states
 - 1,552 confirmed, probable and suspected cases are from Iowa
 - 1,305 probable and confirmed cases have been reported from 7 states (NE, KS, IL, WI, MO, PA and SD)
 - 12 isolated, sporadic mumps cases related to travel have been reported from CO, MN, MS, and NY
 - Current reported number of hospitalizations is 35 which include complications such as meningitis, encephalitis and orchitis

Background about the Epidemic

- The majority of cases reported from all states are in 2-dose MMR recipients.
- Majority of cases have been reported in the 18-24 year old age group, many are college students however cases range from <1 to >90 years of age.
- Between March 26 and April 23, 2006, 11 persons are known to have been potentially infectious with mumps while traveling on 33 different commercial flights involving 8 airlines
 - To date, among 226 exposed passengers and crew, 171 have been followed up for 25 days and 2 cases (one confirmed and one probable) of mumps associated with transmission during air travel have been identified

Background about the Epidemic

- Current source of the outbreak is unknown
- Mumps strain has been identified as genotype G, the same circulating in UK
- Outbreak in the UK has been ongoing from 2004 and has involved >70, 000 cases

Mumps Virus and Blood Transmissibility

- Mumps is a negative stranded RNA virus belongs to paramyxoviridae family
- The virus initiates infection in the upper respiratory tract and then spreads via a primary viremia into draining lymph nodes and then to the parotid and salivary glands.
- Infection disseminates widely due to a secondary viremia and can cause orchitis, oophoritis, pneumonia and meningitis

Mumps Virus and Blood Transmissibility

- 20-40% of the cases may be asymptomatic; therefore, there is a possibility of asymptomatic viremia
- Primary transmission is through droplets via respiratory route.
- No cases of T-T have been ever reported

Mumps Virus and Blood Transmissibility

- The incubation period from the infection to appearance of clinical symptoms is generally 16-18 days (range 12-25 days)
- Symptoms usually resolve within 10 days
- Mumps specific antibody can be detected in serum as early as 11 days following experimental infection in humans.
- Plasma viremia appears to be terminated with the development of humoral antibody response.

Mumps Virus and Blood Transmissibility

- Virus appears to be present in plasma, some studies indicate it is cell associated (lymphocytes)
- Isolation of mumps virus from blood has been rare
- In animal models it has been shown that virus dissemination can occur through cell-associated viremia

Concerns Regarding Potential blood transmission

- Primary contact is not always easily identified
- Possible asymptomatic viremia phase of mumps in the pre-clinical period, during convalescence and in asymptomatic infections
- When illness is reported post donation, there may be infected products on the shelf
- Susceptible recipients, including adults and immunocompromised patients may be at risk for serious outcomes for T-T

Considerations for Interventions

- Consider avoiding blood drives at affected colleges, trade schools, and other institutions and facilities suggested by state and local public health authorities, experiencing mumps epidemic
- Decisions should be based on minimizing the risk of T-T while maintaining blood supplies adequate for medical needs
- The policy should be in place for a minimum of one month after the last diagnosed case.

Considerations for Interventions

- Donor Information: Donors should be provided
 - information by recruiters before presentation to donate,
 - written info at the registration allowing self-deferral,
 - new questions added to the DHQ to allow deferral at the time of screening
- The info should include:
 - existence of mumps in the local area
 - Concerns about its theoretical transmission by blood
 - Donor deferral criteria

Considerations for Interventions

- Donor deferral criteria:
 - Donors should be deferred for 2 weeks post resolution in cases of diagnosed illness
 - Donors should be deferred for 4 weeks post vaccination
 - Donors who have contact with mumps case or cases should be deferred until 4 weeks after the last recognized contact
 - Retrieve products collected from 4 weeks prior to the onset of illness to 2 weeks after resolution of illness based upon post-donation reports of mumps

Additional Considerations for Interventions

- Plasma for further manufacture (source and recovered) is not affected by these recommendations because of viral inactivation procedures used to manufacture plasma derivatives
- Collections facilities may want to consider refraining from the production and transfusion of FFP from collections from institutions or locales with epidemic mumps

Acknowledgments

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