

Hepatitis A Virus

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Hepatitis A Virus (HAV)

- causes the illness hepatitis A, also known as type A viral hepatitis
- occurs sporadically and epidemically worldwide
- levels of endemicity related to the hygienic and sanitary conditions of geographic areas
- where environmental sanitation is poor (i.e. developing countries) infection is common and occurs at an early age
 - disease is most-common among school-age children and young adults
 - epidemics are uncommon due to adult immunity
- epidemics occur in industrialized countries where they generally evolve slowly, cover wide geographic areas, and last many months
 - common source epidemics may evolve rapidly
- there are an estimated 1,399,000 new cases each year



The Virus

- classified with the enterovirus group of the Picornaviridae family
 - includes other disease causing viruses such as polioviruses, coxsackieviruses, echoviruses, and rhinoviruses (cold viruses)
- a single molecule of RNA surrounded by a small (27 nm diameter) protein capsid
- resistant to denaturation by ether, acid (pH 3.0), drying, and temperatures as high as 56°C and as low as -20°C

Reservoir/Sources

- the principal reservoir is humans
 - excreted in feces of infected people
 - reaches peak levels in feces the week or two before onset of symptoms and diminishes rapidly after symptoms appear
- rarely chimpanzees and other primates

Mode of Transmission

- person-to-person by the fecal-oral route
- common-source outbreaks
 - contaminated water
 - food contaminated by infected food handlers
 - Includes foods not cooked or handled after cooking
 - raw or undercooked mollusks
 - harvested from contaminated waters
 - contaminated produce
- infectious dose is unknown, but is thought to be as little as 10-100 virus particles



Signs and Symptoms

- usually a mild illness characterized by sudden onset of:
 - fever
 - malaise
 - nausea
 - anorexia
 - abdominal discomfort
- followed in several days by jaundice
- varies in clinical severity from a mild illness lasting 1 – 2 weeks to a severely disabling disease lasting several months
- prolonged, relapsing hepatitis for up to 1 year occurs in 15% of cases

Incubation Period

- average 28 – 30 days
- range 15 – 50 days
- maximum infectivity occurs during the latter half of incubation and continues for a few days after onset of jaundice
- asymptomatic infections can still shed the virus

Diagnosis and Treatment

- diagnosis is based on serologic testing for IgM antibody to HAV
- there is no specific treatment for infection with HAV
- most people only require treatment to relieve symptoms
- immune globulin (contains anti-bodies)
 - given as a shot
 - provides short-term protection
 - approximately 3 months
 - can be given before exposure to HAV
 - such as before travel to a country where hepatitis A is common
 - can be given after exposure to HAV to prevent infection
 - must be given within 2 weeks after exposure



Prevention

- vaccines can prevent infection with HAV
 - there are 4 inactivated vaccines available
 - vaccines are given parenterally
 - two-dose series
 - 6-18 months apart
 - the duration of protection is likely to be at least 20 years, and possibly lifelong
 - vaccine may be administered concurrently with other vaccines without affecting efficacy
 - recommended for all children, for travelers to countries where HAV infection is endemic, and for people at high risk for infection



Prevention

- wash your hands carefully with soap and warm water several times a day
 - after using the bathroom
 - after changing a diaper
 - before and after preparing food
- do not eat raw or undercooked seafood or shellfish from areas of questionable sanitation
- travelers to developing countries should not drink untreated water or beverages with ice in them
- fruits and vegetables should not be eaten unless cooked or peeled

