Emerging Hepatitis E viruses from swine in Europe

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Abstract

Hepatitis E virus (HEV) is endemic in much of the developing world. Infections in humans can result in acute hepatitis and especially in pregnant women the infection may cause serious complications. The most important route of transmission is faecal-orally, and HEV disease outbreaks are often associated with contaminated drinking water or poor hygienic conditions. Of four HEV genotypes, genotype 3 is responsible for indigenous infections in industrialized countries worldwide. Genotype 4 is observed in sporadic cases in developed as well as developing countries in Asia, while genotype 1 is dominant in the endemic countries in the developing world. In the industrialised countries of Europe, seroprevalence is rather low (1-5%) but in recent years there has been an increasing number of diagnoses of HEV infection due to locally acquired strains. Since HEV genotype 3 and 4 are zoonoses involving several comestible animals, in low-endemicity areas special groups such as farmers, veterinarians, butchers and persons handling animal meat or consumers of undercooked swine, wild boar or deer meat present with a considerably higher seroprevalence than the general population. There may still be an underdiagnosis of HEV infections in Europe; however tens of infections are reported yearly in all countries in North West Europe. In almost all cases this involves HEV genotype 3 strains closely related to HEVs detected in domestic pig, wild boar or deer from the same geographical region. Recently a HEV genotype 4 strain was first isolated from swine in Europe and a closely related HEV sequence was reported from an autochthonous case in Germany. These observations indicate that "new" HEV strains, including genotype 4 strains, may be emerging in Europe. In future HEV genotype 3 and 4 infections might even evolve from a zoonosis to an established human infection.