



## Epidemiological aspects of Hepatitis A

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Enteric viruses (EVs) are the most common cause of gastroenteritis in industrialized countries. EVs are excreted in large numbers in faeces and can cause outbreaks of diseases such as gastroenteritis and hepatitis A. Food and waterborne infections are of special importance, since these outbreaks may involve a large number of people and wide geographical areas.

Hepatitis A (HAV) is the first causative agent for acute hepatitis worldwide. It is primarily transmitted by person-to-person contact through faecal contamination, but common-source epidemics from contaminated food and water may also occur. In the developed countries the incidence of illness is low, while in developing countries is very high. In developed countries the improvement of conditions in the field of hygiene has decreased the impact of illness.<sup>1</sup>

HAV is the prototype of the Hepatovirus genus within the Picornaviridae family.<sup>1</sup> Genetic range among HAV isolates from various regions of the world allowed the classification of HAV strains into 7 different genotypes, four of which (I, II, III and VII) are associated with human HAV infections and three were derived from simian HAV strains (IV, V and VI).<sup>2</sup>

Genotype I is the most common strain worldwide, with genotype III being the second most prevalent. Genotypes I and III have been further divided into subgenotypes A and B. Sub-genotype IA is the major genotype in America and Asia, whereas genotype IB appears to occur in the Mediterranean region and in Europe overall.<sup>2</sup>

The gravity of illness raises with the age of patient. In children the infection is mainly asymptomatic or

mildly, while in adults is usually accompanied with jaundice (>70% of cases). Heavy illness with extensive hepatic necrosis is observed seldom and is accompanied by mortality in 30-60% of cases. A patient that has been infected by HAV can transmit the disease to others 2 weeks before the appearance of jaundice and throughout 10 days thereafter.

In Europe, based on the latest published data of the European Centre for Disease Prevention and Control, the mean notification rate reported by the EU and European Economic Area/European Free Trade Association countries was 3.4 cases per 100,000 population for the year 2009.<sup>3</sup>

Greece is included in the countries of low endemicity regardless the existence of ethnic minorities where the disease has a higher impact. In Greece, there has been a big reduction in the repercussion of hepatitis A during 1980-1995. Today, most cases are sporadic

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as during the period 2004-2011, 921 cases of hepatitis A were reported and the mean annual notification rate was 1.03 cases per 100,000 population.<sup>4</sup>

The geographical area of Eastern Macedonia-Thrace (EMTH) had the highest mean annual notification rate (4.2 cases per 100,000 population) while Western Macedonia had the lowest (0.2 cases per 100,000 population) (Hellenic Center for Disease Control and Prevention, 2012). In 2007, a hepatitis A outbreak occurred in the area of EMTH with the majority of cases in the population of Roma.<sup>5</sup>

In conclusion, Hepatitis A is a worldwide common enteric virus. While it presents endemic in developing countries, in developed countries seroprevalence rates are falling. The prevention and control of viral hepatitis should be part of a plan, including actions in order to promote public sanitation, vaccination wherever is necessary, and measures for outbreak control.<sup>6</sup>

## REFERENCES

1. Cuthbert J (2001). Hepatitis A: Old and New. *Clin Microbiol Rev.* 14: 38-58.
2. Ling L, Ching K, Salete de Paula V, Nakano T, Siegl G, Weitz M, Robertson B (2004). Characterization of the complete genomic sequence of genotype II hepatitis A virus (CF53/Berne isolate). *J Gen Virol.* 85: 2943-2952.
3. European Centre for Disease Prevention and Control: Annual Epidemiological Report. Reporting on 2009 surveillance data and 2010 epidemic intelligence data. Stockholm, European Centre for Disease Prevention and Control (2011). [http://ecdc.europa.eu/en/publications/Publications/1111\\_SUR\\_Annual\\_Epidemiological\\_Report\\_on\\_Communicable\\_Diseases\\_in\\_Europe.pdf](http://ecdc.europa.eu/en/publications/Publications/1111_SUR_Annual_Epidemiological_Report_on_Communicable_Diseases_in_Europe.pdf)
4. Hellenic Center for Disease Control and Prevention - Department of Epidemiological Surveillance and Intervention (2012). Epidemiological data for Hepatitis A in Greece, 2004-2011. <http://www.keelpno.gr>.
5. Vantarakis A, Nearxou A, Pagonidis D, Melegos F, Seretidis J, Kokkinos P, Zarkadis I, Parasidis T, Alamanos Y (2010). An outbreak of hepatitis A in Roma populations living in three prefectures in Greece. *Epidemiol Infect.* 138: 1025-31.
6. WHO position paper on hepatitis A vaccines (2012). 87: 261-276.