

Rapid communications

CLUSTER OF HEPATITIS A CASES AMONG TRAVELLERS RETURNING FROM EGYPT, BELGIUM, SEPTEMBER THROUGH NOVEMBER 2008

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Following a European alert by France, we detected a hepatitis A cluster in Belgian travellers returning from Egypt. Our investigation supports the hypothesis of a common source outbreak, linked to Nile river cruises. The outbreak also suggests the need to consider an intensification of the vaccination policy for travellers to hepatitis A endemic countries.

Introduction

Following the French notification in the Early Warning and Response System (EWRS) on 15 October 2008 about an increase of hepatitis A cases in travellers returning from Egypt and possibly related to cruises on the Nile, the Belgian health authorities were alerted in order to verify whether a similar increase had been observed in Belgium. The infectious disease control units, which are organised by region in Belgium and to whom mandatory notification of each hepatitis A case has to be sent by both physicians and clinical laboratories, analysed their data. At the same time their teams at the level of the provinces were asked to actively investigate each notified case for a potential link to travel in Egypt.

Hepatitis A virus (HAV), a single stranded RNA virus, is mainly transmitted by the faecal-oral route, either by person-to-person contact or by ingestion of contaminated food or water [1]. Only 2-3% of reported cases are identified as part of recognised foodborne outbreaks, though a considerable percentage of sporadic cases might actually be foodborne [2,3]. A large outbreak of hepatitis A among travellers to Egypt in 2004 has been described to be associated with the consumption of orange juice [4]. Hepatitis A is endemic in Egypt and import of hepatitis A from endemic countries is common in Belgium, as it was the case in at least 14% of the hepatitis A notifications in Flanders in 2008. Over the last twenty years the prevalence of hepatitis A in Belgium shifted from intermediate to low, which makes the population more prone to clusters or outbreaks. International and Belgian travel medicine guidelines recommend hepatitis A vaccination of travellers to hepatitis A endemic countries [1].

Methods

A confirmed case was defined as a clinically compatible case with IgM hepatitis A serology, with disease onset between 1 September and 30 November 2008 and with a history of travel to Egypt between 2 to 6 weeks prior to symptom onset.

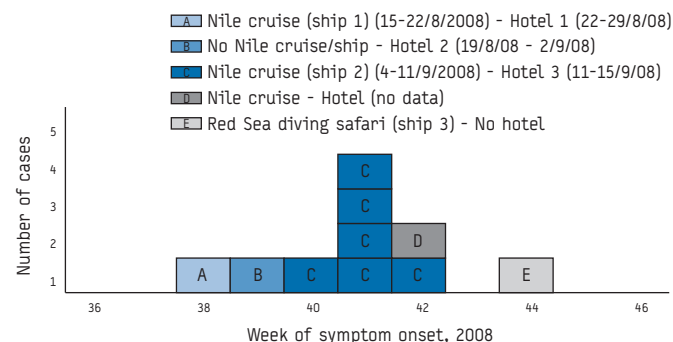
A limited epidemiological investigation was performed in order to verify a possible link between the Belgian cases and the possible sources (cruise ships), mentioned by name in the French alert. Data collection was done by telephone interview with the cases and their physicians. We collected information about age, sex, diagnostics, vaccination against hepatitis A, date of symptom onset, dates of travel and places of stay such as hotels and ships.

A virological analysis has been performed by the National Center of Viral Hepatitis (Scientific Institute for Public Health, Brussels). The HAV outbreak strain was characterised by sequencing a 350bp region, within the variable VP1/2PA junction of the HAV genome [5].

Results

At the time of the European alert, two cases of hepatitis A, suspected to be related to recent travel to Egypt, had been notified since 1 September 2008. By 30 November 2008, a total of 10 laboratory-confirmed cases of hepatitis A infection, with disease onset since 1 September and a history of recent travel to Egypt, had been registered (Figure 1). The median age of the cases was 41 years (range 23-59 years) and the male/female ratio was 3/7.

FIGURE 1
Distribution of cases of hepatitis A with travel in Egypt, by week of symptom onset, September-November 2008, Belgium (n=10)



One patient required hospitalisation but none died. None of the cases had been vaccinated against hepatitis A. They were living in four different provinces.

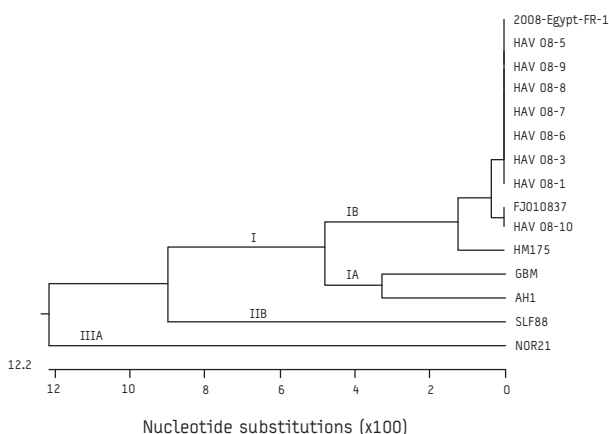
Eight cases had been travelling on a Nile cruise and one on a Red Sea diving safari. Those who took a Nile cruise had done this in combination with a hotel stay. At least three different ships and three different hotel accommodations were mentioned in the travel histories of the cases. However, none of these ships or hotels had been mentioned in the French alert and a bilateral contact by email with the French authorities did not reveal any common name.

One cruise ship was mentioned by six of the 10 Belgian cases. Although they had been travelling together, only two of them (friends who had been lodged in the same cabin on the ship) were aware of their common infection.

Virological analysis was performed on eight (not case D and E on figure 1) out of the ten confirmed cases. Phylogenetic analysis revealed that the HAV strains belonged to genotype IB, and were closely related to the Egyptian isolate (FJ010837). Among the eight patients, seven carried the same strain and the other one differed in only two nucleotides. The outbreak strain identified in France among ten patients who had travelled to Egypt (2008-Egypt-FR-1) showed 100% homology with the seven HAV sequences (HAV 08-1, HAV08-3, HAV08-5, HAV08-6, HAV08-7, HAV08-8, HAV08-9) (Figure 2).

FIGURE 2

Phylogenetic tree of the outbreak strains (HAV 08-1, HAV08-3, HAV08-5, HAV08-6, HAV08-7, HAV08-8, HAV08-9, HAV08-10) circulating in the Belgian travellers returning from Egypt, based on the 350bp region within the VP1-2PA junction of the HAV genome



The phylogenetic tree was generated using the MegAlign program (DNASTAR) by the CLUSTAL method, and the branch length represents the evolutionary distance expressed as the number of base substitutions per site. Genotype and subtype are indicated for each branch. Sequences from Genbank included: genotype IA strain (AH1, AB020564), genotype IA strain (GBM, X75214), genotype IB strain (HM175, M59808), genotype IIB (SLF88, AY644670), genotype IIIA (NOR21, M66695), and an Egyptian isolate strain (FJ010837). Among the eight patients, seven carried the same strain and the last one differed in only two nucleotides. The outbreak strain identified in France among ten patients who had travelled to Egypt (2008-Egypt-FR-1) was included in the analysis.

Discussion

A cluster of hepatitis A cases, related to travel in Egypt, has been identified in a group of Belgian travellers. Only active inquiry, prompted by the French EWRS alert, led to the identification of this cluster, indicating that similar hepatitis A clusters may often go undetected. As our findings come together with similar reports from France and Germany, a possible common source in Egypt, though not identified, cannot be discarded. The similarity of virological sequence analysis between cases in France and Belgium supports this hypothesis. Though travel medicine guidelines recommend hepatitis A vaccination of travellers to hepatitis A endemic countries, all of the identified cases were unvaccinated. In this perspective, and taking into account the increasing susceptibility of our population to hepatitis A, an intensification of the hepatitis A vaccination policy should be considered.

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