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## Q fever outbreak in the Chamonix Valley, France, summer 2002

At the end of July 2002, the Direction Départementale des Affaires Sanitaires et Sociales (DDASS) was informed of several dozen patients who had consulted their general practitioners (GPs) in Chamonix with fever, myalgia, and severe headaches. Most of the patients had serum transaminases 2-3 times above normal level. Most patients recovered spontaneously after 5-10 days. Several patients were hospitalised.

In mid-August the diagnosis of Q fever was confirmed for 10 patients by the presence of Q fever phase II IgM antibodies > 25 in serum.

An epidemiological investigation was carried out by the Cellule Interrégionale d'Epidémiologie de Lyon (CIRE), the Centre National de Référence des Rickettsies (CNR), the Institut de Veille Sanitaire (InVS), and the DDASS, to identify the mode of transmission and the source of the outbreak, and to implement appropriate control measures.

Cases were identified through the GPs of the Chamonix valley, the local hospital, the medical laboratory in the valley and the CNR.

Case definitions used in the investigation:

- Possible Q fever: individual residing in, or visiting Chamonix valley since June 2002 and having presented after 20 June with fever >39 degrees C, accompanied by at least two of the following symptoms: myalgia, nausea, chills.
- Probable Q fever: a possible case with an increase of transaminases AST and ALT, above normal.
- Confirmed Q fever: a possible or probable case with positive serology for Q fever (phase II IgG >/= 100 and phase II IgM at >/=25).

Up to 30 August, 79 cases were identified: 25 possible, 32 probable and 22 confirmed cases. All

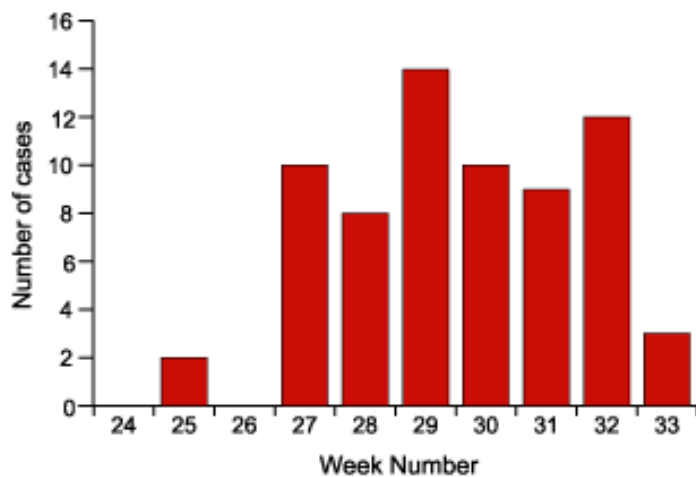
were adults between 17 and 92 years of age. The M:F ratio was 1.8:1. Eleven individuals required hospital treatment.

Place of residence was known for 71 cases. Fifty seven (80%) live in the commune of Chamonix, 11 (15%) live in another town in the valley, or close to the valley, and 3 are French tourists.

An exploratory study carried out on 19 confirmed cases suggested airborne contamination from one or several excretory herds (sheep, goats or cattle), possibly moving to summer pastures, or from manure spreading areas. None of the cases has a high-risk profession for Q fever infection (for example, stock breeder, abattoir technician, etc.). During the exposure period, four individuals had close contact with ruminants, four had eaten cheese made from unpasteurised milk, of which one only had eaten locally produced cheese. None had drunk unpasteurised milk. Seven had domestic animals. The cases questioned did not attend an event involving animals. Neither is there an abattoir or knacker's yard in the valley.

The epidemic curve, which is not complete for week 33 and after, due to the delay in getting the onset dates, suggests a persistent source of contamination.

Figure: Cases (possible, probable and confirmed) of Q fever by week of onset of symptoms, Q fever outbreak, Chamonix Valley, 2002.



A case control study is in progress to determine risk factors and transmission methods (movement, consumption of unpasteurised milk, direct or indirect contact with manure or animal herds, participation in an event involving indirect or direct contact with animals, etc.). In parallel, information is being gathered on the animal herds present in the valley since June 2002. These enquiries should further clarify the hypothesis on the source of contamination and allow us to put control measures in place.

#### Recommendations to the public

Since June 2002, residents and visitors of the Chamonix valley may have been exposed to *Coxiella burnetii*, the agent causing Q fever.

Consequently, the Ministry of Health recommends that persons belonging to high-risk groups (pregnant women, persons with valvular cardiac disease, or immunosuppressed persons) who were resident or who stayed in the Chamonix valley between June and the present time consult a doctor to get a diagnostic test, and, if necessary, suitable medical treatment.

An alert was sent to the European national health authorities via the European surveillance network for alert action on 27 August 2002.

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