

## PUUMALA (HANTAVIRUS) EPIZOOTIOLOGY IN THE ARDENNES REGION (FRANCE)

F. SAUVAGE<sup>1</sup>, C. PENALBA<sup>2</sup>, Ph. VUILLAUME<sup>3</sup>, E. CAIN-JOUQUELET<sup>4</sup>, D. PONTIER<sup>2</sup>, D. COUDRIER<sup>5</sup>, M. ARTOIS<sup>6</sup>

### Affiliation:

1. UMR-CNRS 5558 "Biométrie et Biologie évolutive", Université C. Bernard Lyon 1, 43 Bd du 11 novembre 1918, 69622 Villeurbanne cedex, France.
2. Centre Hospitalier, 08000 Charleville-Mézières, France
3. Entente Interdépartementale de Lutte contre la Rage, BP 43, 54220 Malzéville, France.
4. AFSSA Nancy, Domaine de Pixérécourt, 54220 Malzéville, France.
5. Centre National de Référence des Arbovirus et virus des Fièvres hémorragiques, Institut Pasteur, 25 rue du Dr Roux, 75724 PARIS Cedex 15 France.
6. ENVL Unité Pathologie infectieuse, BP 83, 69280 Marcy l'Etoile, France. Corresponding author

### Abstract

Human cases of the so called "haemorrhagic fever with renal syndrome" (HFRS) were routinely recorded at the CHR (regional hospital) of Charleville, (Ardennes) France. This hospital has registered the maximum number of human disease cases in this country. Epidemic outbreaks of acute infection have been recorded every third year, on a regular basis since the year 1990.

During the three years preceding the last peak of the disease (1999), Bank vole (*Clethrionomys glareolus*) the rodent reservoir, was monitored by trapping and antibody screening. Voles were box-trapped on standard trap-lines in a randomised selection of wooded habitats near the city of Charleville. This surveillance was aimed to test the hypothesis that the population level increase in the reservoir will amplify the virus prevalence in voles, and the infection hazard in exposed human beings afterward.

If the sampled rodents are representative of the whole population of reservoir to which humans are exposed, the data are in accordance with a synchrony of the infection rate of both species during the three years epidemiological cycle. But the assumption that the vole demographic population peak precedes the epidemic outbreak in humans is not supported by the data.

During the whole study, the demography of the monitored vole population can be described by a global trend of increase (x by four) with seasonal fluctuations (top in September and bottom in spring). But the prevalence rate reached a maximum 8/10 % level already during the autumn of 1998 (year 2) and remained at this level up to the population peak in September 1999. It can be speculated that the amount of available virus in voles was at its highest level in between September 1998 and 1999.

In accordance with previous records, the greatest number of HFRS was registered during this period at Charleville CHR. Provided that the data of this preliminary study are accurate, the temporal correlation between the infection rates in the human victim and the reservoir host strongly suggest a common source of infection. We hypothesise that mechanism of virus excretion is related to the social structure of the reservoir. In combination with an indirect transmission route it can explain the observed infection figure in voles. These hypotheses are to be challenged during ongoing epidemiological studies.

**Zusammenfassung(??)**

**Résumé (??)**

**Key words:**

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