

Short Report

Seroepidemiology of Hantaan-related virus in Gabon

A. DUPONT¹, J. P. GONZALEZ², A. GEORGES³ AND B. IVANOFF¹

¹International Centre of Medical Research (CIRMF), P.B. 769, Franceville, Gabon; ²Viral Ecology Laboratory, ORSTOM, P.B. 923, Bangui, Central African Republic; ³Institut Pasteur, P.B. 923, Bangui, Central African Republic

Haemorrhagic fever with renal syndrome (HFRS) has been described mainly in Asia and Europe. Serological evidence of infection by Hantaan or a related virus has more recently been reported in Africa: in Gabon, only one of 30 sera examined was positive (GONZALEZ *et al.*, 1984). In Senegal, SALUZZO *et al.* (1985) reported a prevalence of 16.5% in inhabitants of Kabrousse, with 31% of tested rats seropositive.

We have conducted an epidemiological survey in a village in the Province of Haut-Ogooue (south-east Gabon). We examined 213 people (80% of the population) and obtained blood samples. Antibodies to Hantaan virus were tested for by an indirect immunofluorescent assay, using as antigen Vero E6 cells infected with strain 76-118 of Hantaan virus (GONZALEZ *et al.*, 1984). Of the 213 sera tested, 17 (8%) were positive with IgG titres between 1 in 16 and 1 in 128. IgM antibodies, at titres of 1 in 16 to 1 in 32, were found in 4 of the IgG positive sera but none of the IgG negative sera. The age range of individuals with positive serology was 4 to 70 years. No sex difference was observed. No symptom of haemorrhagic or renal disease was noted. Urine examination, using semiquantitative strips, showed only 2 cases of low proteinuria (0.30g/l) and one of haematuria (>500 RBC/ μ l). None of the 4 people with IgM antibodies had urine abnormalities. Creatinine levels were high

(>130 μ mol/litre) in 8 cases including 2 of those with IgM antibodies. The mean creatinine level was significantly higher in people with antibodies to Hantaan virus (134 μ mol/litre) than in 52 age and sex-matched controls (99 μ mol/litre, $P < 0.001$).

It is difficult to evaluate the role of HFRS in febrile illnesses in rural Africa, which may have many other causes. None of the people with anti-HFRS antibodies had a haemorrhagic syndrome, but we have no other explanation for the elevated creatinine levels.

These serological results confirm the presence of Hantaan-related virus in Gabon, and indicate a higher frequency than previously reported. The clinical picture appears similar to the non-haemorrhagic nephropathy described in northern Europe, or to the silent or atypical forms of HFRS postulated by TKACHENKO *et al.* (1982).

As suggested by GIBBS *et al.* (1982), clinicians in Africa should be aware of the possible role of Hantaan or related viruses in patients presenting with fever of unknown origin, renal dysfunction and no haemorrhagic symptom.

References

- Gibbs, C. J. Jr, Takenaka, A., Franko, M., Gajdusek, D. C., Griffin, M.D., Childs, J., Korch, G. W. & Wartzok, D. (1982). Seroepidemiology of Hantaan virus. *Lancet*, *ii*, 1406-1407.
- Gonzalez, J. P., MacCormick, J. B., Baudon, D., Gautun, J. P., Meunier, D., Dournon, E. & Georges, A. J. (1984). Serological evidence for Hantaan-related virus in Africa. *Lancet*, *ii*, 1036-1037.
- Saluzzo, J. F., Digoutte, J. P., Adam, F., Bauer, S. & MacCormick, J. B. (1985). Serological evidence for Hantaan-related virus infection in rodents and man in Senegal. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, *79*, 874-875.
- Tkachenko, E. A., Dzagurova, T. K., Leschinsakaya, E. V., Zagidulin, I. M., Ustjugova, I. M., Gasanova, T. A., Rezapkin, G. V. & Miasnikov, J. A. (1982). Serological diagnosis of haemorrhagic fever with renal syndrome in European region of USSR. *Lancet*, *ii*, 1407.

Accepted for publication 2 December 1986.

cahier III 11

84

O.R.S.T.O.M. Fonds Documentaire

N° : 24030 ex 1

Cpte : B