

TRANSLATION 810 (T810)
MEDICAL ZOOLOGY DEPARTMENT
UNITED STATES NAVAL MEDICAL RESEARCH UNIT No. 3
CAIRO, EGYPT

TRANSLATION FROM RUSSIAN. CHUNIKHIN, S. P., CHUMAKOV, M. P., BUTENKO, A. M., SMIRNOVA, S. E., TAUFFLIEB, R., CAMICAS, J. L., ROBIN, Y., CORNET, M., & SHABON, Zh. (1969)*. Results from investigating human and domestic and wild animal blood sera in the Senegal Republic (western Africa) for antibodies to Crimean hemorrhagic fever virus. Mater. 16. Nauch. Sess. Inst. Polio. Virus. Entsef., (Moscow, October, 1969), (2):158-160.

The antigenic relationship between the Soviet strains of Crimean hemorrhagic fever (CHF) virus and African and Pakistan (southeastern Asia) strains of Congo virus (Casals 1968, Chumakov, Smirnova, et al. 1969) has been recently established. Thus, we investigated CHF virus antigens in human and animal blood sera from Senegal Republic (West Africa) where distribution of Congo virus infection is possible owing to natural conditions. No cases associated with Congo and CHF viruses had been known in Senegal Republic before this investigation.

Serological investigations for CHF virus were made in Senegal from 3 May to 26 June 1969. A total of 1,608 human and animal blood sera was investigated by the agar gel diffusion and precipitation (DPRA) test. Forty-one DPRA positive sera were studied by the CF test. Sucrose-acetone antigens of 2 CHF virus strains (Khodzha, Uzbekistan, 1967, and Sudarkina, Rostov Oblast, 1968) were used.

Domestic animals proved to be the best indicator for detecting antibodies to CHF virus. This is explained by the fact that most ixodid tick vectors of this virus feed on domestic animals. We examined domestic animal blood sera from the following phyto-geographical regions of Senegal: (1) northern Senegal semidesert (Sahel), (2) northern Sudan savanna, (3) southern Sudan savanna, and (4) Casamance region covered with dry forests.

- 1) The northern Senegal semidesert is characterized by the most

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Materialy XVI Nauchnoy Sessii Instituta Poliomielitita i Virusnykh Entsefalitov, 21-23 Oktyabrya 1969 G. Vypusk 2: Arbovirusy (Kleshchevoy i Yaponskiy Entsefality, Gemorragicheskie Likhoradki i Drugie Arbovirus nye Infektsii), edited by CHUMAKOV, M.P., Akad. Med. Nauk SSSR., Inst. Polio. i Virus. Entsef., Moskva, 1969.

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n° 7498 Ent. Med.

intensely developed cattle breeding and the highest cattle and tick concentrations (chiefly Hyalomma). Hyalomma impeltatum prevails among ixodid ticks. Annual precipitation 300-500 mm.

A total of 747 sheep and cattle sera was investigated in this region. The immune stratum among sheep was 5.8% (30 immune of 512 investigated) by the DPRA and among cattle 11.5% (27 of 235 investigated). The difference in immune stratum level between sheep and cattle is explained by the fact that the average age of a sheep is half that of cattle. Association between the immune stratum level and the age of cattle is very distinctly observed in this region. Thus, the immune stratum level was 4.3% (2 of 46) in 1-3 years old, 13.0% (3 of 23) in 4-6 years old, and 24.1% (7 of 29) in 7-9 years old animals. Forty-one DPRA positive sera were examined by the CF test; positive responses were obtained in 24 (more than 50%) cases. Sera with anticomplement activity were treated in kaolin, which decreased the titer of antibodies. Responses were considered positive in a beginning dilution of 1:8.

2) Northern Sudan savanna occupies the central portion of Senegal. Annual precipitation 750-1,000 mm, grass cover is richer than in the semi-desert, nomadic cattle have local character. Hyalomma truncatum prevails among ixodid ticks; Amblyomma variegatum is next in frequency. A total of 263 domestic animal blood sera was examined: 80 goats, 70 sheep, and 113 (heads) cattle. Antibodies were absent in goats; immune stratum was 1.4% among sheep and 6.2% among cattle.

3) Southern Sudan savanna occupies the southeastern portion of Senegal. Annual precipitation 1,200 mm. We examined 26 cattle blood sera and 4 (15.4%) of them proved to be immune.

4) Casamance region occupies the southwestern portion of Senegal, Annual precipitation 1,500 mm. This region is chiefly characterized by dry deciduous forests. Cattle are provided with fodder which excludes nomading. Thus, CHF-Congo virus natural foci are greatly isolated. We examined 233 animal blood sera. The immune stratum was 8.6% (8 of 93) among cattle and 1.4% (1 of 70) among goats; no immune sheep were recorded.

Wild mammals. We examined 137 blood sera of wild mammals belonging to the following orders: Rodentia, Lagomorpha, Carnivora, Primates, and Chiroptera. DPRA antibodies were found in 2 animals, Mastomys sp. and Genetta genetta; 1.5% were immune.

Wild birds. A total of 43 wild bird blood sera was examined; no immune birds were recorded.

Humans. Sera from 159 febrile patients were examined. Blood samples were taken on day 1-3 following onset of fever. No antibodies were found in humans.

Thus, these serological data show a quite wide distribution in Senegal Republic (West Africa) of the virus closely related or identical in antigenic properties to CHF virus and additionally confirm the possibility of referring CHF and Congo viruses to same immunological type. It is interesting that clinically pronounced hemorrhagic fever infections were absent among humans and animals, despite the virus presence in nature and confirmed by detection of antibodies.