Chikungunya fever outbreak in Al-Hudaydah, Yemen, 2011: Lessons learned in dengue-endemic countries for early detection and control


1 World Health Organization, Cairo, Egypt
2 World Health Organization, Geneva, Switzerland
3 US Naval Medical Research Unit-3, Cairo, Egypt
4 US Naval Medical Research Unit-3, Cairo, Egypt
5 Ministry of Public Health, Sana, Yemen
6 World Health Organization, Beirut, Lebanon

Background: Little is known about the occurrence of chikungunya fever in the Eastern Mediterranean Region of WHO. In January 2011, the Ministry of Public Health and Population (MoPH&P) of Yemen reported to WHO an increasing trend of dengue-like acute febrile illnesses in one of its governorates.

Methods & Materials: A field investigation was carried out in Al-Hudaydah governorate between 23-26 January, 2011 by a joint team comprising of representatives from the MoPH&P, Yemen, the Eastern Mediterranean Regional Office of WHO (EMRO/WHO) WHO, Geneva and the U.S. Naval Medical Research Unit (NAMRU-3) in Cairo.

Results: Al-Hudaydah is the fourth largest governorates of Yemen with an estimated population of 2.1 million. The capital of the governorate is an important port city of the country and is situated on the Red Sea and is known as an epidemic foci for several outbreaks of vector-borne diseases.

The findings of the field investigation led by WHO marked the first ever report of chikungunya fever in Yemen and in the Eastern Mediterranean Region of WHO. Appropriate control measures were strengthened following the investigation and the outbreak was contained.

Conclusion: In areas of high dengue-endemicity, the epidemic risk for chikungunya fever and other arboviral diseases, that share the same vector for transmission, can be anticipated with a rise in global travel. In limited resource settings, this presents a particular challenge if any early sign of an impending epidemic is missed. This may result in long duration of an epidemic occurrence with large number of morbidities and even mortalities if both viruses are co-circulating at the same time (dengue virus is concurrently circulating during the same outbreak).

http://dx.doi.org/10.1016/j.ijid.2014.03.875

High incidence of *Borrelia crocidurae* in acute febrile patients in Senegal

O. Mediannikov 1,*, C. Socolovski 2, H. Bassene 1, G. Diatta 1, P. Ratmanov 3, F. Fenollar 4, C.S. Sokhna 5, D. Raoult 6

1 Institut de Recherche pour le Développement, Dakar, Senegal
2 Faculty of Medicine, Mediterranean University, Marseilles, France
3 Far-Eastern State Medical University, Khabarovsk, Russian Federation
4 Méditerranée Infections, Marseilles, France
5 IRD - URMITE, Dakar, Senegal
6 Faculté de la Méditerranée, Marseilles, France

Background: As malaria recedes, several unexplained non-malarial fevers have become increasingly important, thus justifying the development of programs designed to study the roles of other infectious diseases as causes of febrile syndrome in Africa. Tick-borne relapsing fever (TBRF) is thought to be one of the major causes of fevers in Africa. The reported incidence rate of TBRF in West Africa is high, reaching even 25 cases per 100 person-years or 13% of the causes of fevers treated at rural dispensaries.

Methods & Materials: In 2008, we began to create a network of rural dispensaries to recruit patients. Five study sites and 14 dispensaries are located in different ecosystems. 200 μl of blood was collected from the fingertips of 1549 febrile patients (axillary temperature >37.5 °C) and 91 randomly selected healthy villagers for DNA extraction. The samples were considered positive only if both qPCR and flaB-based PCR were positive.

Results: All tested samples of clinically healthy individuals were negative when tested for Borrelia by qPCR. The percent positives for *B. crocidurae* identified in the studied samples were 7.3% (115/1566). The higher proportion was noted in Niakhar 19.1% (33/173). The incidence of borreliosis (identified only for one site) was 9.7/100 in Dielmo and 2.4/100 in Ndiop. We identified 20 cases (49 samples) in which the same person provided two to four samples that were positive for *B. crocidurae*. The interval between the sampling was short (5-30 days) in 12 subjects, average (30-66 days) in 4 subjects, and long (102-381 days) in 3 subjects.

Conclusion: We report the presence of borreliarial DNA in the blood of febrile patients in Senegal with an alarming high proportion. We observed autochthonous cases only in Northern Senegal, roughly to the north of the 13°30’ parallel. We note the recent extension of *B. crocidurae* into the village of Ndiop, which had, until now, been spared. The re-infection is strongly suspected in 3 cases with the interval between two positive samples longer than 100 days. This considerable incidence should lead to the development of new therapeutic strategies that may be based on the doxycycline treatment of febrile patients in Senegal.

http://dx.doi.org/10.1016/j.ijid.2014.03.876