Does suspicion of Ebola virus disease have consequences on the diagnosis delay for other infectious diseases?

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Background: The 2014-2015 Ebola virus disease outbreak in West Africa is the largest in history, and has affected more than 28,500 patients, and killed more than 11,000. Outside of Africa, patients returning from an endemic area were classified as Ebola suspect cases if they presented with fever within 21 days after leaving an area at risk. In most countries, a national surveillance system was implemented, including specific rules for the management of suspect cases, to ensure that no secondary transmission occurs. However, most of these suspect cases turned out to be more common infectious diseases, including malaria. We aimed to characterize the management of patients suspected of Ebola virus disease outside of an endemic area, focusing on the final diagnosis, and the delay associated with Ebola virus disease suspicion in the diagnosis process for these patients.

Material/methods: We performed a retrospective observational multicentric study of cases suspected of Ebola virus disease in France from April, 2014 to August, 2015. Inclusion criteria were i) fever; ii) stay in an Ebola endemic area within 21 days before fever onset. We used the mailing list of infectious disease French society (SPILF) to send a standardized questionnaire, and data were collected by physicians in charge. The study was approved by the national ethics and data protection committees.

Results: Thirty-four patients fulfilled inclusion criteria (19 males, 15 females), with a median age of 33 years (interquartile range, 26-43). They returned from Guinea (n=21), Nigeria (n=4), Sierra Leone (n=3), Mali (n=3), Liberia (n=2), and Congo (n=1). For 7 patients, fever appeared in the endemic area; for the remaining 27, fever appeared after arrival in France, with a median delay of 1 day (IQR 0-8). Other symptoms included asthenia (n=27), headache (n=20), myalgia (n=18), abdominal pain (n=10), and diarrhea (n=9). Patients were admitted with a median delay of 1 day (0-5) after fever onset, and 28 of them were isolated with Ebola specific precautions, for a median duration of 8 hours (2-30). The final diagnosis was obtained in 28 patients: malaria (n=10; 36% of diagnosis), pneumonia (n=3), gastroenteritis (n=3), influenza-like illness (n=2), pharyngitis (n=2), and cellulitis, pyelonephritis, tuberculosis, HIV, salmonellosis, shigellosis, influenza B, seizures (one patient each). No case of Ebola virus disease was diagnosed in France during the study period. For 12 patients (35%), Ebola suspicion was associated with a diagnosis delay, for a median duration of 3 hours (2-36), with no clinical consequences. All patients survived.

Conclusions: Most patients suspected of Ebola virus disease in France during the 2014-2015 outbreak were finally diagnosed with other infectious diseases, mostly malaria. Ebola suspicion was associated with a diagnosis delay in 35% of patients.