

ABSTRACT

Background

Fever with jaundice is a common syndrome of some infectious diseases. However, in the Democratic Republic of the Congo, Yellow fever (YF) is the only cause of fever with jaundice under surveillance. Only 1% of cases included in the surveillance are positive for YF and indicated the involvement of other pathogens. Leptospirosis, a widespread bacterial zoonosis, is also known as a cause of fever with jaundice. This study aimed to determine the seropositivity of leptospirosis among suspected cases of YF and map their geographical distribution in the Democratic Republic of the Congo (DRC).

Material and methods

This was a retrospective study using samples of 1,300 patients included in YF surveillance in the DRC from January 2017 to December 2018. Serum samples were screened for the presence of IgM against leptospira by a Whole cell-based IgM ELISA (Patoc-IgM ELISA) at the Institut National de Recherche Biomedicale in Kinshasa (INRB) according to World Health Organization (WHO) guidance. Univariable and multivariable analyses were undertaken to assess associations between socio-demographic factors and the presence of leptospira IgM.

Results

Of the 1,300 serum samples screened, 88 (6.8%) showed evidence of IgM against leptospira. Most positive cases (34%) were young adult males in the 20- 29 years group. There was a statistically significant association between having leptospira IgM antibodies and age, sex, and residence.

Observed positive cases were mostly located in urban settings, and the majority lived in the province of Kinshasa.

Association between the season of occurrence of fever and jaundice was statistically significant for those living in Kinshasa, where most of the positive cases occurred during the rainy season.

Conclusion

This study showed that leptospirosis is a probable cause of unexplained cases of fever with jaundice in the DRC and highlights the need to consider leptospirosis as a differential diagnosis in the surveillance of fever with jaundice in the DRC, particularly in young adult males. Further studies are needed to identify animal reservoirs, associated risk factors, and the actual burden of human leptospirosis in DRC.

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