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Letter to the Editor

Kyasanur forest disease: Another flavivirus requiring more research? Results of a bibliometric assessment

Dear Editor

Emerging infectious diseases research on high impact pathogens, such as Ebola is a matter of concern. As has been described by Garg and Kumar in its recent bibliometric analysis of that zoonotic viral disease [1], other emerging pathogens deserve also more analysis. May this be the case for Kyasanur forest disease (KFD).

KFD is a tick-borne flavivirus transmitted by *Haemaphysalis* species. It was first isolated from a monkey in the Kyasanur Forest in Karnataka state, India, where it is endemic (1957). This virus is transmitted by tick bites or contact with infected animals, becoming more common in humans due to deforestation and introduction of human to monkey ecosystem, although fortunately, to this moment, no person-to-person transmission has been described [1–5]. KFD has been also described in Kerala, Tamil, Nadu, Goa and Maharashtra (India) as well as in China [3]. Clinical manifestations are associated with hemorrhagic events as well neurological disease [5], nowadays it is known that initial signs and symptoms develop 3–8 days after tick-bite with fever, headache, myalgia, lymphadenopathy, conjunctivitis, photophobia and nose, mouth, gastrointestinal tract bleeding [2–5]. KFD diagnosis is based in clinical features, epidemiology and can be confirmed by PCR and IgM-ELISA [4,5]. Despite this, knowledge and research on KFD has been considered limited and bibliometric assessments characterizing the scientific output have not been carried on to date.

We performed a bibliometric analysis using all the information available in major biomedical and multidisciplinary journal-indexing databases to evaluate the current state of KFD-related published literature worldwide. We searched in three databases, including Scopus, Medline (using GoPubMed) and Google Scholar. Our search strategy involved collecting data on indexed articles from these databases using the term “Kyasanur Forest Disease” as the most important search key for analysis.

At the Scopus search we identified 218 articles (61% from India, 27% from United States of America [USA] and 19% from Saudi Arabia). At Medline we retrieved 173 articles (61% from India, 16% from USA and 3.5% from France) (Fig. 1). The Google Scholar search revealed that there were 122 articles (83% from India, 6% USA, and 3% from Canada). Our findings showed that 24.6% of the articles available in Scopus and 5.2% of articles indexed in Medline were published in the last two years (Fig. 1). Network analysis revealed that only one significant cooperation had been established with the leading of author “Singh K” (Fig. 1). Most of the papers have been published in the Indian Journal of Medical Research (20 on Medline).

There is a significant concordance between epidemiology of the disease and the articles published given that the majority are from India the most affected country. The National Institute of Virology in Pune, India, has published 12 articles (7% of the published researched indexed in Medline), followed by CDC in Atlanta, Georgia, CEH Institute of Virology and Environmental Microbiology, Oxford and Université de la Méditerranée, Unite des Virus Emergents, Marseille, France; each one with 4 articles (2.3%). These results were expected since India is still the only considered endemic country of this disease, play a remarkable role in research and control of KFD.

KFD infection may be considered an unusual disease not known in most places of the world. Its possible arrival to other countries would be considered or assumed as unprobable. However, we have witnessed that many arboviral infections have traveled with people from long distant places in the world causing epidemics never seen before (e.g. chikungunya and Zika in the Americas). KFD affects predominantly people living in rural areas, however globalization plays an important role in virus expansion [1–5].

All the research conducted around KFD has lead to the development of a vaccine for prevention of people living in endemic areas, its effectiveness is in constant study [3–5].

Finally, it is important to develop bibliometric studies related to infectious diseases, specially those neglected tropical diseases, because it can help in the anticipation and creation of preventive strategies, specially in places where vector is present and other risk factors affect the populations like living in rural areas, poverty and coexistance with animals [3–5]. This bibliometric assessment clearly showed that KDF is another emerging flavivirus requiring more research.

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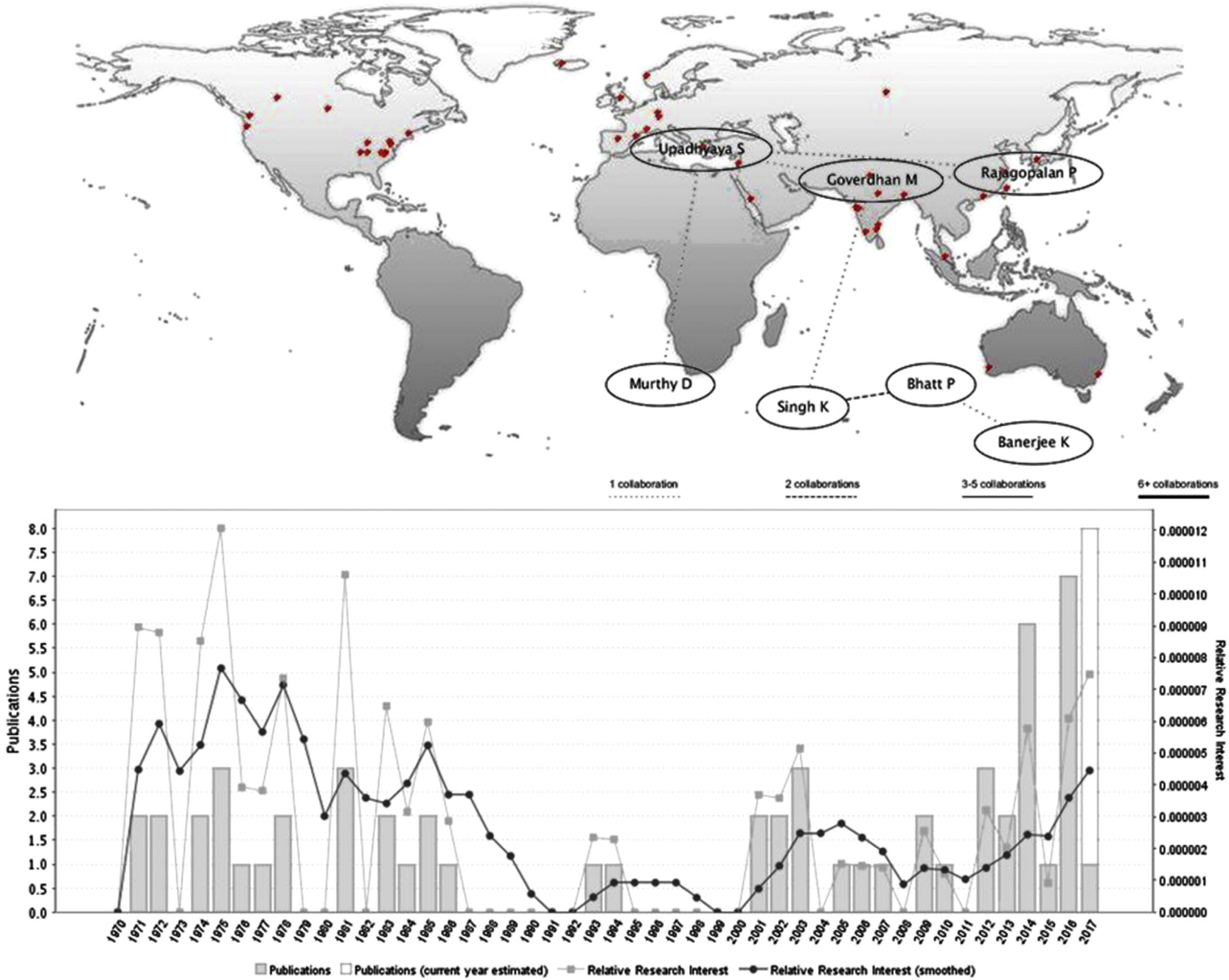

Fig. 1. Trends in research on KFD, places of publication and cooperation networks, 1970–2017, based on Medline.

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Conflict of interest

None of the authors report conflict of interests.

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