Journal of Infection and Public Health (2017) 10, 363—365

http://www.elsevier.com/locate/jiph

LETTER TO THE EDITOR

Bibliometric assessment of scientific production of literature of West Nile Virus

Dear Editor,

West Nile Virus (WNV) is an arbovirus of the genus *Flavivirus* (family *Flaviviridae*) [1]. WNV was first isolated in 1937 from a woman in West Nile, Uganda [2]. Sporadic cases have since been reported in several countries [3]. Outbreaks have been recorded in Algeria, Romania, Congo, Russia, the United States, and Israel [4]. Recently, cases of WNV infections in humans were reported in Canada, the Caribbean, Mexico, and Brazil [5,6]. Infection in humans is usually characterized by mild symptoms such as headache, fatigue, muscle aches, and hyperthermia [7].

To assess the impact of WNV on scientific reports published globally, a bibliometric analysis was conducted by searching the major publication-indexing databases Medline (using GoPubMed®), Scopus, LILACS, and SciELO for WNV-related content from prominent journals. The articles were recovered using the term ''West Nile Virus'' as the main operator.

From Scopus, 4068 articles were recovered of these, 2055 (50.5%) were from the United States, 204 (5.1%) from Canada, 184 (4.5%) from France, 133 (3.6%) from Italy, and 126 (3.0%) from Australia. From Medline, 3383 articles were recovered 1519 (44.90%) were from the United States, 83 (2.45%) from Italy, and 81 (2.39%) from Australia and Canada. From LILACS, 38 articles were recovered 11 (28.94%) were from South America and 4 (10.52%) were from North America. From SciELO, 10 articles were recovered 8 (80%) were from Brazil and 1 (10%) was from Colombia and the United States. In 2006, 271, 315, 6, and 4 articles related to WNV were deposited in Medline, Scopus, LILACS, and SciELO, respectively.

Table 1 Top twenty countries with scientific production on West Nile Virus research at Scopus, SciELO, LILACS and/or Medline (up to June 1, 2016).

Classification	Countries	Number of articles	Database with highest number of articles
1	United States	3.645	Scopus
2	Canada	290	Scopus
3	France	251	Scopus
4	Italy	230	Scopus
5	Germany	150	Scopus
6	United Kingdom	134	Scopus
6	Spain	134	Scopus
7	Israel	117	Scopus
8	Japan	114	Scopus
9	Greece	104	Scopus
10	China	94	Scopus
11	Singapore	93	Scopus
12	Netherlands	76	Scopus
13	India	72	Scopus
14	Turkey	65	Scopus
15	Mexico	55	Scopus
16	South Africa	48	Scopus
17	Czech Republic	40	Scopus
18	Hungary	36	Scopus
19	Switzerland	30	Scopus

http://dx.doi.org/10.1016/j.jiph.2016.08.018

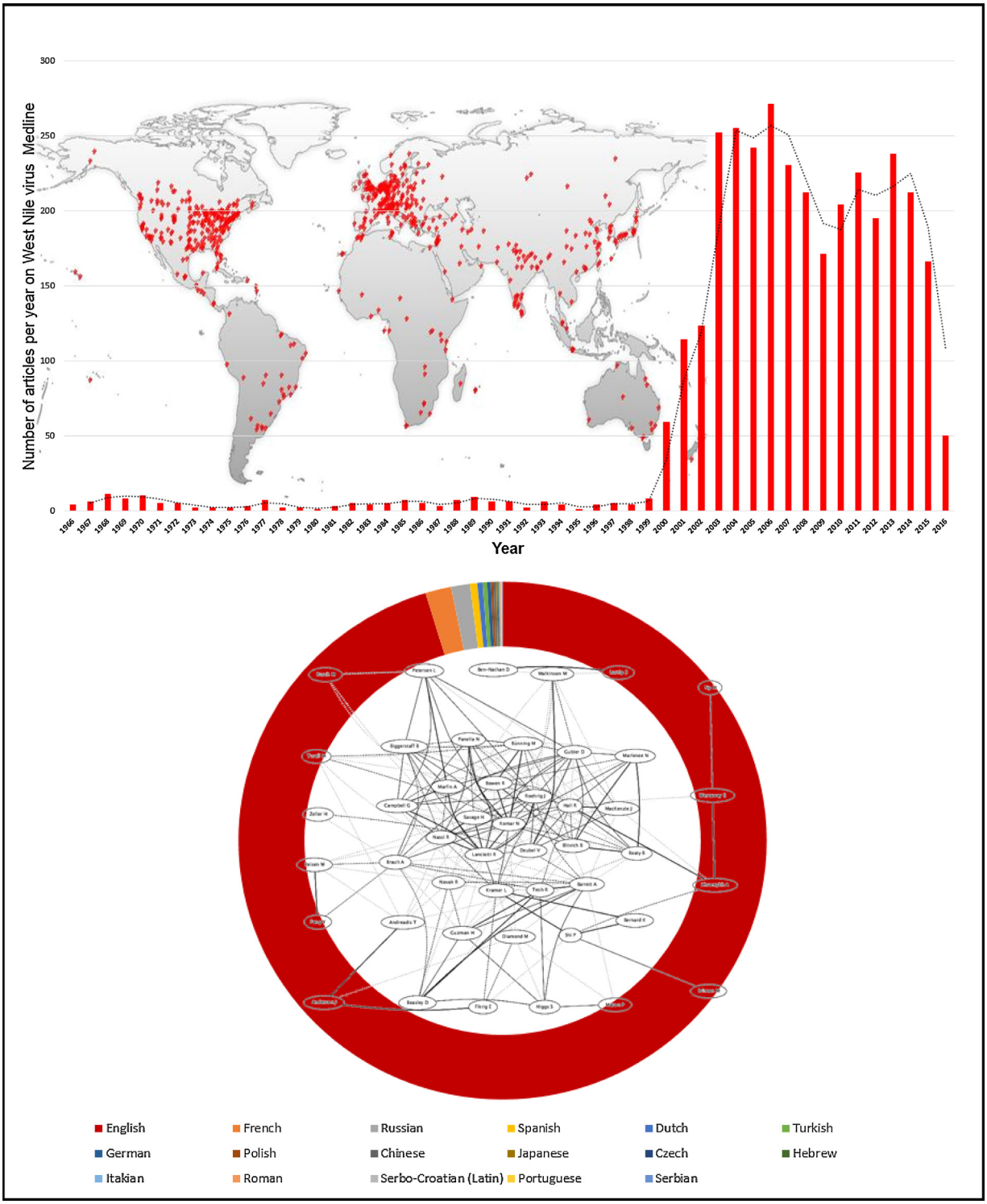

Figure 1 Major international research cooperation networks and trends of publications on West Nile Virus, 1966—2016 (from GoPubMed® and Medline®).

These results indicate that the United States is the key player in the research on WNV, contributing 48.60% of all scientific reports published on this topic. This large contribution could be attributed to the numerous WNV outbreaks and cases in humans reported annually from this region [8].

After 2000, the number WNV-related articles indexed in Medline increased considerably, ascending from 59 articles in 2000 to 212 articles in 2014 (Fig. 1). A similar trend was observed in Scopus, with the number of indexed articles increasing from 69 to 245 between 2000 and 2014 (Table 1).

Since its first isolation, WNV has been extensively studied globally. The main publications on WNV are case reports, case studies, and control and cohort studies. In August 2014, a worker from Piauí, Brazil, showed clinical symptoms of acute encephalitis, laboratory tests confirmed this to be the first case of human WNV infection in Brazil [6]. Demonstrates the transition capacity and worldwide adaptability of arbovirus.

Bibliometric assessment of infectious diseases allows evaluation of the possible emergence of future diseases and their impact on the world [9] and provides an accurate overview of scientific output over time. The findings also highlight the need for improving vector control in countries infested by the mosquito *Culex quinquefasciatus*, a known vector for various viruses [10].

Funding

The author receives master scholarship from Amazonas State Research Support Foundation (FAPEAM).

Competing interests

None declared.

Ethical approval

Not required.

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12 June 2016

29 August 2016