

## May sand fly fever be seen with leishmaniasis as coinfection or not?

One of the arboviral disease, which could be transfer to human and animal belongs to Bunyaviridae family is sand fly fever. Sand fly fever, also called three-day fever, papataci fever or Phlebotomus fever, is a vector-borne disease like Leishmaniasis and rodents may play a key role as reservoir and sand fly also play as vector of the diseases<sup>[1,2]</sup> Of course, not all sand fly could transfer the disease, just only female sand fly susceptible to transfer the infection anyway.<sup>[3]</sup> There are similar vectors for leishmaniasis, which is endemic in more than 88 countries in the World.<sup>[4]</sup> It must be mentioned in endemic area that the disease may be seen as co-infection with leishmaniasis. However, the co-infection of the disease, which is mentioned above was reported before<sup>[5-7]</sup> but co-infection of sand fly fever with cutaneous leishmaniasis has not been reported so far. I would like to bring your attention 'in endemic area the diseases may be seen as co-infection and that needs more accurate diagnosis and identification with epidemiological data in the future.

### Introduction and Objective

Sand fly fever remains a significant health problem in many parts of the world (particularly in Africa, the Mediterranean Basin, the Middle East, Central Asia, and Europe). The aim of this

study was to determine the latest circumstances of this disease at present which may be seen with Leishmaniasis as co-infection in the world.

**Materials and Methods:** Two methods were used to gather the information for this article. First, *PubMed* was searched for English language references to published relevant articles. Second, the term sand fly fever was searched on Google Scholar too.

**Results:** In *PubMed*, 156 articles and in Google Scholar, 70,400 articles mentioned the term sand fly fever. The most searched items in *PubMed* were epidemiology, treatment, prevention, and life cycle with incidences of 41.66, 20.51, 13.46, and 1.92%, respectively, and in terms of geographical distribution of the study, the maximum number of articles in *PubMed* were published from Europe, Asia, Australia, and America, with percentages being 26.92, 17.30, 17.0, 1.28, and 1.28%, respectively. **Conclusion:** Different countries have reported the disease either as an endemic or as an imported one. co-infection with Leishmaniasis further investigations on the pathology and virulence of ecology of sand fly fever are necessary to improve the understanding of this cycle in order to provide adequate preventive measures and also to improve them.

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There are no conflicts of interest to declare.

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