

Pneumonia in Tropical Arbovirus Infection: An Issue in Tropical Respiratory Medicine

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ABSTRACT

The tropical arbovirus infection is the present public health in several countries. The clinical manifestation of tropical arbovirus infection is various, however, the common presentation is the acute febrile illness. The respiratory problem relating to tropical arbovirus infection is very interesting. In the present editorial the clinical interrelationship between pneumonia and important tropical arbovirus infection is summarized and discussed.

Key words: Pneumonia; Arbovirus; Infection

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INTRODUCTION

The tropical arbovirus infection is the present public health in several countries. The clinical manifestation of tropical arbovirus infection is various, however, the common presentation is the acute febrile illness. The respiratory problem relating to tropical arbovirus infection is very interesting. In the present editorial the clinical interrelationship between pneumonia and important tropical arbovirus infection is summarized and discussed.

DENGUE AND PNEUMONIA

Dengue is an important tropical arbovirus infection caused by dengue virus. The infection can lead to the acute febrile illness. The thrombocytopenia due to dengue infection is an important clinical problem that might lead to severe form of dengue, the dengue hemorrhagic fever. In the most serious form, the shock can be seen and the mortality in dengue shock syndrome is high^[1]. The expansion of dengue endemic area becomes important global public health issue in the present day.

Basically, dengue might result in several atypical clinical presentations but respiratory presentation is uncommon. Dengue cannot cause pneumonia but it might occur with pneumonia. In severe infection, the critically ill dengue patients might have pneumonia as complication and the high mortality is common in those patients^[2-3]. Some patients might have both pneumonia and dengue and this problem might be difficult for diagnosis. The Staphylococcus pneumonia is reported for concurrence with dengue^[4-5]. Cavity lesion is generally observed in those dengue with concurrent Staphylococcus pneumonia. Sometimes, dengue might co-occur with other infection and might further lead to the exacerbation of pneumonia. The coinfections with influenza or *Mycoplasma pneumonia* are the good example^[6-7]. Of interest, the co-infection with dengue might result in immunoaberration that leads to immunocompromised status. There is also a report on a non-HIV infected case with dengue that finally developed pneumocystis pneumonia^[8].

CHIKUNGUNYA VIRUS INFECTION AND PNEUMONIA

Chikungunya virus infection is an important tropical arbovirus infection. The disease has similar clinical feature to dengue but the patient usually have joint pain. Chikungunya virus generally does not cause pneumonia. However, in a recent report from Réunion, Economopoulou *et al* reported pneumonia as an atypical clinical presentation in Chikungunya virus infection^[9]. Similar to dengue, pneumonia is an important complication in patients with severe Chikungunya virus infection^[10]. In a recent report from Mayotte, 2.6 % of severe cases had pneumonia^[11].

YELLOW FEVER AND PNEUMONIA

Yellow fever is an important arbovirus infection seen in tropical Africa and South America. The disease can cause severe illness with neurological complication. The prevention of this disease is possible by vaccination. The yellow fever virus cannot directly cause pneumonia but pneumonia is an important complication in severe yellow fever. Similar to the observation in severe dengue, the complicated pneumonia is an important cause of death in patients infected with yellow fever^[11].

ZIKA VIRUS INFECTION AND PNEUMONIA

Zika virus infection is a new emerging arbovirus infection that is the present big public health problem. The disease can cause febrile illness and there are many reports on the congenital microcephaly in infants born to infected mothers. The interesting question is whether Zika virus infection can cause pneumonia. According to the present available data (September 2018), there is no report that Zika virus can cause pneumonia. Nevertheless, similar to the observation in other arbovirus infections, the pneumonia is reported to be an important cause of death in fatal Zika infected cases^[12]. The issue on the interrelationship between Zika virus infection and pneumonia is a very interesting for further research in tropical respiratory medicine.

CONCLUSION

There is an interrelationship between pneumonia and tropical arbovirus infection. The concurrent infection between arbovirus infection and pneumonia is possible. Also, in severe arbovirus infection, pneumonia is an important clinical complication in the patient and might be the cause of death. Conclusively, pneumonia in arbovirus infection is clinically observable as a) a clinical problem in severe form of arbovirus infection (as a consequence of direct lung damage by the virus or toward a dysregulated immunologic response) or b) a secondary bacterial infection.

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