

## Zika Virus, Lymph Node and Lymphoma

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Zika virus infection is the present global threat that already attacks several countries around the world. Zika virus might be classified as an infection that causes the problem in blood system. It manifests like dengue, a common well-known tropical infection. The blood picture finding is extremely similar and cannot be easily differential diagnosed [1]. The thrombocytopenia and atypical lymphocytosis can be seen in Zika virus infection, which makes it impossible for making differential diagnosis from dengue infection [1]. Focusing on the effect of Zika virus infection on lymph node, it is rarely mentioned. According to a recent report by Aid et al. [2], it was noted that “occult neurologic and lymphoid disease may occur following clearance of peripheral virus in ZIKV-infected individuals.” Indeed, it is no doubt that the lymph node can be affected in Zika virus infection. Although it was mentioned in some report that the involvement of superficial lymph node and spleen was not observable [3] the involvement of other deep lymph node can be expected. Focusing on its highly similar infection, dengue, the lymph node involvement is possible [4] and lymphadenopathy is not uncommon but little mentioned. For the case of Zika virus infection, the similar clinical problem might occur.

In human beings, there are very few specific reports, but there are some recent reports in animal model. In a study on “Rhesus Macaques Infected with a Brazilian Strain of Zika Virus” Silveira by et al., “lymph node hyperplasia was clearly visible postviremia but was associated with low frequencies of ZIKV-specific Ab-secreting cells in lymph nodes and bone marrow [5].” In non-human primate, the Zika virus is proved for existence in lymph node [6]. Li et al. found that the virus targeted “lymph nodes till 10 days post infection [6].” In the report by Aid et al. the virus was found to be persistent in lymph node till 28 to 35 days post infection [2]. In guinea pig model, it was proved that the Zika virus replicated in spleen [7]. For human beings, there is an interesting report on fetuses infected with Zika virus infection from Columbia [8]. Acosta-Reyes et al. found that the neurological abnormality was associated with the occurrence of abnormal spleen, the biggest lymphoid organ [8].

Apart from the acute or subacute problem in Zika virus infection, an interesting concern is whether there is any other long term complication of Zika virus induced lymphadenopathy. In fact, the long-term infection of some viruses such as EBV virus is related to the occurrence of lymphoma. Whether there is a long term persistence of Zika virus in lymph node is still inconclusive. The relationship between Zika virus and lymphoma becomes an interesting topic for further study in blood and lymph. Based on the present available evidence, there is still no case report of Zika virus infection in patient with underlying lymphoma as well as leukemia. Also, it is likely that there should be no carcinogenicity of Zika virus [9]. Nevertheless, it was noted for the possible oncogenic property of another similar arbovirus, Chikungunya virus [10]. The possible relationship to Burkitt lymphoma of the arbovirus including to Zika virus is still a topic for study in hematolymphology.

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