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## Editorial

## Nutritional Disorder in Zika Virus Infection -

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The Zika virus infection is the new problem that is the present hot topic in medicine. The Zika virus is an arbovirus that can be transmitted by tropical mosquito and it can cause the new emerging disease called Zika virus disease. The Zika virus disease has a wide clinical spectrum ranging from asymptomatic to severe clinical problem [1]. The interesting problems relating to Zika virus infection is the neurological problem as well as teratogenic effect. The emerging problem of abnormal infants who born to infected mothers in tropical South America leads to the present global attention to the Zika virus disease. The Zika virus disease can be presently seen worldwide in both tropical and non-tropical areas affected many countries around the world. To control this disease, it is still not successful and there is still no available vaccine against Zika virus disease [2]. The prevention of the Zika virus disease is solely depending on mosquito prevention, safe sex contact and contraception.

In nutrition, the important concern is the effect of Zika virus infection on nutritional status of the patients and the effect of nutritional disorder on the course of Zika virus infection. The topic on nutrition and Zika virus is little mentioned in the literature. Referring to the similar arbovirus infection, dengue, there are some reports regarding the interrelationship between dengue and nutrition. At least, the nutrition management is an important but forgotten issue in management of patient with dengue [3]. Ahmed et al. studied on the available publications on micronutrients and dengue and concluded that “We found critical issues and often inconsistent results across studies; this finding along with the lack of sufficient literature in this field have limited our ability to make any recommendations. However, vitamins D and E have shown promise in small supplementation trials” [4]. Trang et al. performed a metanalysis to assess the association between nutritional status and dengue infection and concluded that “Results from previous studies failed to show any solid consistency regarding the association between the nutritional status and dengue infection. Consequently, the effects of nutritional status on dengue disease outcome have been controversial” [5]. Nevertheless, in another study, Libraty et al. found that malnutrition presenting with low adiposity during early infancy was associated with a low risk for developing dengue hemorrhagic fever [6].

Considering Zika virus infection, there are few reports on nutritional aspect of this new emerging infection. Leandro noted that there should be interrelationship between nutritional status and the gross abnormalities in the child with Zika virus disease [7]. In fact, anyone with the problem of malnutrition is usually prone to have a medical disorder. The infection can be a superimposed problem to the patients with underlying nutritional deficiency status. An important nutritional problem that is common worldwide is the anemia. The interesting question is whether Zika virus infection can induce anemia or not. For the effect of Zika virus, it is an acute illness, hence, the induction of anemia of chronic disease should not be seen. According to a recent report by Wiwanitkit and Wiwanitkit,

anemia was not observed in the patients with Zika virus infection [8]. Focusing on carbohydrate and lipid, important nutrients that give energy, there is no report that Zika virus can induce the abnormality of those nutrients status in the infected case. In fact, the Zika virus can also be seen in patients with the abnormal metabolism. Nevertheless, there is no report on the important additional clinical problem observed in the patients with glucose (diabetes mellitus) or lipid metabolism (dyslipidemia). Focusing on the vitamin, the important micronutrient, there are some reports on the vitamin A and its possible interrelationship with pathology in Zika virus infection. Mawon noted that the fatal birth defects as well as the Guillain-Barré syndrome are due to “an endogenous form of hypervitaminosis a resulting from ZIKV infection-induced damage to the liver and the spillage of stored vitamin A compounds (“retinoids”) into the maternal and fetal circulation in toxic concentrations” [9]. Hence, the hypervitaminosis a observed in the patients with Zika virus infection is an interesting issue for further study in nutritional medicine.

Focusing on the effect of nutrition on the Zika virus infection, there is a recent report by Haung et al. that “Zika virus infection was significantly impaired among mosquitoes orally challenged with infectious protein meals as compared to infectious whole blood meals” [10].

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