

G-6-D Deficiency: Problem in Zika Virus Infection?

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The G-6-PD deficiency is an important inherited red blood cell disorder. Due to the abnormal enzymatic system, the red blood cell in patients with G-6-PD deficiency is fragile and hemolysis easily occurs during exposure to chemicals such as drugs. Several drugs including to sulfa are documented risk for the patients with underlying G-6-PD deficiency. In addition, the stress during infection is also considered risk for hemolysis episode for the patients with underlying G-6-PD deficiency. In the present day, the new emerging arbovirus infection becomes a new public health problem. Due to the outbreak of the disease worldwide, the problem becomes common problem around the world.

The Zika virus infection is a new emerging arbovirus infection that is the present focus in medicine. This infection can caused febrile illness and might be easily missed. The disease can be seen in several tropical regions and already existed in non – tropical countries. The disease can be transmitted by mosquito vector as well as sexual contact. The teratogenic effect in infected pregnant women leads to the global consideration on this new medical problem. To manage this new problem still requires worldwide collaboration. The Zika virus infection can be seen at any sex and age group. The Zika infection can also be seen in patients with underlying disease and this is an interesting topic in medicine.

For the patients with underlying G-6-PD deficiency, the effect of the Zika virus infection is the interesting topic but largely unknown. Since the Zika virus disease occurs in tropical zone where the G-6-PD deficiency is also observable, the concurrence between two problems can be expected. Of interest, there is still no specific report on this topic. Nevertheless, the reports are available on other similar arbovirus infection. In dengue, Tanphaichitr et al. studied dengue and G-6-PD

deficiency and reported that “*The prevalence of G-6-PD deficiency in male patients who had DHF in this study was 19.1 per cent which was higher than the prevalence in a previous study of 12 per cent in Bangkok [1].*” Tanphaichitr et al. concluded that “*This may imply that G-6-PD deficient males suffer more from DHF compared to normal G-6-PD subjects [1].*” Al-Alimi et al. found that “*dengue virus-infected G6PD-deficient individuals may contain higher viral titers, which may be significant in enhanced virus transmission. Furthermore, granulocyte dysfunction and higher viral loads in G6PD-deficient individuals may result in severe form of dengue infection [2].*” Referring to Zika virus infection, since it is highly similar to dengue, the similar problem might be expected and this is an actual interesting topic for further researching in hematology.

Focusing on the drug effect, since there is still no specific drug against Zika virus infection, the problem does still not exist. Nevertheless, the new drug and vaccine for Zika virus infection is ongoing studied. If the new drug is already available, the verification on the safety in case with underlying G-6-PD deficiency is needed. For the case with Zika virus infection, since it is highly similar to other tropical infection, the patients might have chance to expose to other common antibiotics and if there is a self-medication, the risk for having drug induced hemolysis in cases with underlying G-6-PD deficiency can be expected.

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