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Ebola Infection and Diabetes Mellitus

Sora Yasri¹, Viroj Wiwanitkit²

1. KMT Primary Center, Bangkok Thailand

2. Hainan Medical University, China

Corresponding author and reprints: Dr Sora Yasri, KMT Primary Center, Bangkok Thailand. Email: sorayasri@outlook.co.th.

Received: 2015 Oct 05 Accepted: 2015 Dec 06

Dear Editor-in-Chief

Diabetes mellitus is the common endocrine problem that affects millions of world population. The disease can be seen in every country around the world. It is recorded as one of the most common non-infectious disease at present. In the era of the new emerging diseases, the concern on the effect of new diseases on diabetes should be discussed. For example, in the case of new emerging zoonotic influenza infections, the effect of the new diseases on the clinical course of diabetes mellitus is mentioned (1). In addition, the interesting observation of the prevalence and severity of new emerging infections in the cases that has diabetes mellitus, as a concomitant disorder is also available in the literatures.

In this letter, this specific issue will be briefly summarized and discussed. Zimmet noted that "with the re-emergence of devastating communicable diseases including AIDS, the Ebola virus and tuberculosis, the pressure is on international and regional agencies to see that the no communicable disease epidemic is addressed (2)".

At present, there are many cases of Ebola virus infection. It is no doubt that the Ebola virus infection already exists in the diabetic patients. However, there is still no official report on this specific topic. Nevertheless, in the recent report from Guinea, there is still no statement mentioning the diabetes mellitus in the patients infected with Ebola virus (3). However, there are some previous reports mentioning the value of blood glucose determination in Ebola virus infection. Arsand et al. noted, "When a person gets infected, the blood glucose value increases (4)." Arsand et al. also concluded, "Continuous analysis of blood glucose data may have the potential to prevent large outbreaks of infectious diseases, such as different strains of Influenza, Cholera, Plague, Ebola, Anthrax and SARS (4)." In addition, there is another report, although it is no directly relating to diabetes mellitus, that using heat manipulation for control of contaminated Ebola virus in blood did not affect the blood glucose level (5).

As previously noted, there is little information on alteration of blood glucose in Ebola patients. The increased blood glucose level is observable and this is a usually forgotten problem (4). Arsand et al. noted that hyperglycemia might be an early clinical observation of Ebola virus infection during the outbreak (4). In a recent report by Brizendine, the increased blood glucose level was also reported in the patient infected with Ebola virus disease (6). Nevertheless, not only increased but also decreased blood glucose level can be expected. Since the gastrointestinal problem, especially for diarrhea, is common in Ebola

virus disease, the decreased blood glucose level can be expected. Blood glucose monitoring is important in management of patients with possible dehydration (7). The point-of-care testing blood glucose monitoring could be useful tool for monitoring purpose (7). The importance of maintain normal glucose level in outcome of the patients with Ebola virus disease should be mentioned since the extreme fluctuation of blood glucose level can be the serious comorbid condition that superimpose the critically ill condition of the patients. Since there is still no complete information, it is needed to perform a study to assess the prevalence of diabetes among the patients infected with Ebola virus infection. Additional study on the severity and clinical course of Ebola virus infection in such cases should also be investigated. These data is helpful for summarization on the unknown relationship. Nevertheless, it is generally recommended that a patient with diabetes mellitus might have a high vulnerability to the infection. These patients should be especially cared and prevented for the infection.

It is very interesting to see the connection between Ebola infection and diabetes mellitus. However, at present, there are no data to convince its relation. Hence, it is not possible to establish the direct relation of Ebola infection and diabetes until the detailed analysis. After going through the present article "Ebola infection and diabetes mellitus-short information", the authors would like to raise the following concerns [a]. Study to assess the prevalence of diabetes among patients infected with Ebola [b]. Severity and clinical course of Ebola infection in diabetics, and [c]. Is there high vulnerability for diabetics to Ebola? Regarding [a] the possible method is to look for Ebola seropositivity among diabetics. The screening will be expensive and is not going to help anybody. Regarding [b]&[c] it may be noted that defense mechanism of body to infection tend to fall when FBS exceed 210 mg% and hence blood sugar estimation is recommended whenever we are dealing with an infection especially when the incubation period of the disease is smaller as in Ebola. Besides these aspects, there is another question to be answered- Is there definite interaction between diabetes and Ebola? It is still the myth that "do both these situations worsen each other?" Such mutual worsening occurs when there is sharing and synergism of pathophysiology like elevation of cytokines like IL-6.

In conclusion, Ebola infection is a major public health problem, which needs more investigation about the prevention and control of the disease, as well as the diagnosis and treatment of the disease. The relationship between Ebola and diabetes is a forgotten topic and there is need to focus on this question.

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How to cite this article:

Yasri S, Wiwanitkit V. Ebola Infection and Diabetes Mellitus. *Iran J Pathol*. 2016;11(2):191-3.