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### Dengue and lupus: The problem of co-occurrence

Sora Yasri<sup>1\*</sup>, Viroj Wiwanitkit<sup>2</sup><sup>1</sup>KMT Primary Care Center, Bangkok, Thailand<sup>2</sup>Hainan Medical University, Haikou, China

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#### ABSTRACT

Dengue is a common tropical disease. It can be seen in any tropical countries. The occurrence of dengue in the patients with underlying medical illness is very interesting and can be a complicated case. Here, the authors discuss on interesting aspect on the problem of co-occurrence between dengue and lupus, a common autoimmune disease that can be seen worldwide.

## 1. Introduction

Dengue is an infectious disease cause by an important arbovirus namely dengue. Dengue is a common tropical disease. It can be seen in any tropical countries[1]. The patients with dengue infections usually develop acute febrile illness and hemorrhagic complications. The occurrence of dengue in the patients with underlying medical illness is very interesting and can be a complicated case. The occurrence of severe manifestation can be expected and the fatality can be seen in the worst cases. Here, the authors discuss on interesting aspect

on the problem of co-occurrence between dengue and lupus, a common autoimmune disease that can be seen worldwide.

## 2. Co-occurrence between dengue and lupus: really existed?

It is no doubt that the co-occurrence between dengue and lupus is really existed. The most recent report is by Verdolin et al. on a case of dengue in a lupus patient with rhabdomyolysis as a complication[2]. In fact, it should be noted that dengue is a viral infectious disease whereas the lupus is a chronic autoimmune disease. Hence, the lupus should be the underlying disease and dengue is the epidemic attacking episode. The question is dengue infection result in anything in the lupus patient. Basically, the viral infection

\*Corresponding author: Sora Yasri, KMT Primary Care Center, Bangkok, Thailand

E-mail: [sorayasri@outlook.co.th](mailto:sorayasri@outlook.co.th)

is considered an important trigger factor for developing of full blown or flaring up of lupus manifestation, the systemic lupus erythematosus[3,4]. Also, there can also sometimes be occurrence of other autoimmune disease after dengue infection before ending up with systemic lupus erythematosus. The good example is an unusual case, reported by Harris et al., of Kikuchi's disease after dengue virus infection that finally evolved into systemic lupus erythematosus [5]. The pathogenesis is believed to be due to hyperimmune response in dengue[6].

On the other hand, there is also a problem of misdiagnosis or delayed diagnosis due to the co-occurrence of both diseases. Sometimes, there is no co-occurrence but there is a case of missed diagnosis between the two problems. For example, dengue might mimic flaring up of lupus [7]. Also, delayed diagnosis of systemic lupus erythematosus due to misinterpretation of dengue serology is also reported[8,9]. This is the false missed diagnosis.

### 3. Co-occurrence between dengue and lupus: increased complication?

As already noted, the co-occurrence between dengue and lupus can be problematic. The problem might be due to a) delayed or missed diagnosis that results in late giving of appropriate management and b) an actual pathomechanism that result in severity or complication. The good example is the recent report case by Verdolin et al. showed the rhabdomyolysis in the co-occurrence between dengue and lupus [2]. Indeed, rhabdomyolysis is rarely seen in both diseases. Another interesting example is the report of complicated lupus nephritis in the co-occurrence between dengue and lupus[3,4]. For the case ended up with lupus nephritis, Rajadhyaksha and Mehra proposed that "dengue virus could have triggered a dysfunctional immune response, resulting in the developing of autoimmunity and SLE with lupus nephritis[3]."

### 4. Future prospective

Further more information should be accumulated and the systematic surveillance to find out the exact epidemiology of comorbidity should be done. If the disease is finally confirmed as a new emerging problem, further study should be focused

on the exact pathophysiological process of disease and clinical importance. These data are needed for further public health planning to correspond diagnosis, treatment and prevention of this important medical disorder.

### 5. Conclusion

Co-occurrence between dengue and lupus is possible. The problem of triggering of lupus flare-up and increased problematic complication such as nephritis and rhabdomyolysis can be seen.

### Conflict of interest statement

We declare that we have no conflict of interest.

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