

Acute Kidney Injury in Patients with Dengue Shock Syndrome

Dang Şok Sendromlu Hastalarda Akut Böbrek Hasarı

Doreen Sumpat¹, May Zaw Soe², Mexmollen Marcus³, Zulkhairul Naim bin Sidek Ahmad⁴, Constance Liew Sat Lin⁵, Selim Ahmed¹, Mohsen M A Abdelhafez², Chandrika A/P Murugaiah⁶, Alvin Oliver Payus¹

¹Department of Internal Medicine, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia

²Department of Reproductive Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia

³Department of Trauma and Emergency Department, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia

⁴Department of Public Health Medicine, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia

⁵Department of Anaesthesiology, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia

⁶Department of Biomedical Science and Therapeutic, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia

ABSTRACT

Dengue virus is a major cause of arthropod-borne viral disease in the world especially in tropical countries. Its clinical manifestation varies from mild to severe which includes Hemophagocytic lymphohistiocytosis (HLH), also known as hemophagocytic syndrome that carries extremely high morbidity and mortality rate. Bacterial and fungi coinfection in dengue may complicate the clinical manifestations and management. Initially diagnosis may become a challenge as well as it can have an unorthodox presentation. This was a case of dengue fever where the clinical course and the clinical presentation was atypical and challenging. It was also associated with multiorgan complications. It is of pertinent to establish the diagnosis and address the complications promptly as to avoid irreversible end organ damage.

Keywords: Acute Kidney Injury, Dengue, Dengue Shock Syndrome

Received: 01.13.2022

Accepted: 05.23.2022

ÖZET

Dang virüsü, dünyada özellikle tropik ülkelerde artropod kaynaklı viral hastalıkların önemli bir nedenidir. Klinik olarak, son derece yüksek morbidite ve mortalite oranı taşıyan hemofagositik sendrom olarak da bilinen Hemofagositik lenfohistiyoitoz (HLH) dahil olmak üzere hafif ile şiddetli arasında değişir. Dang hummasında bakteriyel ve mantar koenfeksiyonu klinik belirtileri ve yönetimi zorlaştırabilir. Başlangıçta tanı, alışılmışın dışında bir sunuma sahip olabileceği gibi bir zorluk haline gelebilir. Bu, klinik seyirin ve klinik sunumun atipik ve zorlu olduğu bir dang humması vakasıydı. Ayrıca multiorgan komplikasyonları ile ilişkiliydi. Geri dönüşü olmayan uç organ hasarını önlemek için tanıyı koymak ve komplikasyonları derhal ele almak uygundur.

Anahtar Sözcükler: Akut Böbrek Hasarı, Dang humması, Dang Şok Sendromu

Geliş Tarihi: 13.01.2022

Kabul Tarihi: 23.05.2022

ORCID IDs: D.S.0000-0001-5507-4275, M.Z.S.0000-0001-7574-0554, M.M.0000-0003-3131-1939, Z.N.S.A.0000-0002-0608-7528, C.L.S.L.0000-0003-2474-6598, S.A.0000-0003-2570-2546, M.M.A.A.0000-0001-8389-4553, C.A.P.M.0000-0002-4301-8994, A.O.P.0000-0003-4675-103X

Address for Correspondence / Yazışma Adresi: Doreen Sumpat, MD Department of Internal Medicine, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia E-mail : doreenes2@ums.edu.my

©Telif Hakkı 2022 Gazi Üniversitesi Tıp Fakültesi - Makale metnine <http://medicaljournal.gazi.edu.tr/> web adresinden ulaşılabilir.

©Copyright 2022 by Gazi University Medical Faculty - Available on-line at web site <http://medicaljournal.gazi.edu.tr/>

doi:<http://dx.doi.org/10.12996/gmj.2022.104>

We would like to congratulate the authors for publishing an interesting article (1). Dengue is one of the most important arthropod-borne viral diseases. Dengue illness affects tropical and subtropical regions especially in South East Asia with high morbidity and mortality. There are a few issues that we would like to discuss and highlight with the authors.

It is clinically practical to grade the presentation and severity of dengue based on 2009 WHO Dengue Classification and Level of Severity. The term dengue haemorrhagic fever (DHF) was no longer recommended to use as it may cause confusion. From the history given, the patient was presented with severe dengue in dengue shock syndrome (DSS) and severe organ involvement. She came to hospital at Day 5 of illness and was still in febrile phase as her body temperature was 39°C. However, according to the course of dengue illness and her blood parameters result, she was going into defervescence phase which is also known as critical phase. Since the Ig-M anti-dengue negative, but Ig-G anti-dengue was positive, we would recommend the authors to repeat Ig-M after Day 7 of illness. In our opinion, she may have secondary dengue infection due to the severity of her clinical presentation and initial anti-dengue Ig-M negative. In secondary dengue infections, anti-dengue IgM was detected in among 78% of patients after day seven (2). This can be due to the appearance of high levels of anti-dengue IgG before or sometimes simultaneously with the IgM response. Furthermore, this information is also pertinent to the epidemiological data in public health medicine.

It would be of valuable information if the authors provide the total fluid boluses or fluid replacement given to the patient as well as the repeat blood parameters result and clinical response prior to the initiation of haemodialysis. We also recommend that serum lactate is taken as it will be useful in this case to establish the severity of tissue hypoperfusion as well as response to fluid therapy. Lastly, in our opinion, monitoring of serum chloride after fluid resuscitation with crystalloid fluid especially in dengue shock syndrome is important as it helps to identify hyperchloremic acidosis which can aggravate and confused with lactic acidosis from prolonged shock. Hence, it is advisable to change to Ringer's lactate when the serum chloride exceed normal range.

Conflict of interest

No conflict of interest was declared by the authors.

REFERENCES

1. Gusti Putu Hery Sikesa, Nyoman Paramita Ayu, Jodi Sidharta Loekman. Acute kidney injury in patients with dengue shock syndrome, *Gazi Medical Journal*. 2022;33(1):73-74.
2. Schilling S, Ludolfs D, Van An L, et al. Laboratory diagnosis of primary and secondary dengue infection, *J Clin Virol*. 2004 Nov;31(3):179-84.