

## Letter to the Editor

# Dobrava virus: a mortal agent of hemorrhagic fever with renal syndrome

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The majority of Hantavirus infections in the world appear in the form of hemorrhagic fever with renal syndrome (HFRS). Infections are frequently found in China and South Korea [1]. There are also increasing numbers of cases in Europe and the Balkans and, as of 2010, in Turkey. Infections develop with different subtypes. Puumala (PUUV) and Dobrava (DOBV) subtypes are more common in Europe and the Balkans, and subtypes such as Hantaan (HTNV) and Seoul (SEOV), in Asia [2-4]. One of the most common subtypes in Turkey is DOBV; subtypes are also of considerable prognostic importance [2]. Mortality in infections with DOBV viruses can rise to as high as 15% [5].

Hantaviruses were first seen in Turkey in the form of a local epidemic in 2010, and general sporadic cases have been seen since then [6,7]. Due to the increasing rise in the prevalence of Hantavirus and, as fatal cases have been reported, the subject has begun to be considered seriously in Turkey and has aroused great interest among clinicians. The fact that Hantaviruses have become a worldwide health problem and are being found in neighbouring countries as well as Turkey, it is not surprising as the countries in question are host to numerous rodents.

Since the disease involves clinical and laboratory findings such as fever, muscle-joint pain, headache, lethargy, thrombocytopenia and acute renal failure, careful differential diagnosis is needed to exclude infectious diseases, such as Crimean Congo Hemorrhagic Fever (CCHF), the virus which is a member of Bunyaviridae, leptospirosis and non-infectious diseases like hemolytic uremic syndrome (HUS) and malignities [7]. CCHF patients do not undergo renal failure, except in rare cases, and this is

important when performing differential diagnosis of Hantavirus infections [8]. This is because early and accurate diagnosis can prevent prognosis taking a negative direction through the provision of requisite support treatments, by identifying patients in the early stages. In our study, performed with that purpose, we investigated whether Hantavirus infections can be predicted during the first application stage, before definitive diagnosis has been established [7]. We observed that some laboratory and clinical findings in cases serologically and definitively diagnosed as Hantavirus differ from those of other infections and internal diseases. The result that caught our attention the most concerned C-reactive protein (CRP). Interestingly, in addition to CRP being positive in these patients, even though it is a viral infection, CRP possessed a significantly high positivity compared to other patients to whom differential diagnosis was performed [7]. Moreover, ROC analysis revealed a negative predictive value of 100% in the diagnosis of Hantavirus infection [7]. Serum creatinine and urea values were also significantly higher in these patients compared to others, while thrombocytopenia levels were significantly lower [7]. Another significant characteristic of these patients was the presence of proteinuria/hematuria in almost all of them. As seen in our study, approximately 1/3 of these patients require hemodialysis. Completely accurate support treatments also including hemodialysis will therefore be of considerable prognostic importance. Another study showed that mortality was correlated with severity and transfusion needs [9]. High serum white cell (WBC) values, urea nitrogen (BUN), creatinine phosphokinase (CPK), prothrombin time (PT), activated partial thromboplastin time (aPTT), D-dime and international

normalized ratio (INR) are prognostic factors that increase the risk of mortality [2,9]. The diagnostic cut-off points with respect to mortality risk were Wbc=16000/uL, platelet=30000/uL, PT=19.7 s, aPTT=36 s, INR=1.2, D-dimer=9.3 µg/mL, CPK=600 U/L, BUN=47 mg/dL and CRP:13,4 mg/dL [9].

We think that DOBV infections should be considered in cases of severe hemorrhagic fever and that it is important to be able to diagnose these infections in the early stages with tests that can be routinely performed.

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