

## Inflammatory cytokines kinetics define the severity and phase of nephropathia epidemica

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### Abstract

© 2014 Future Medicine Ltd. Aims: Nephropathia epidemica (NE) is a form of hemorrhagic fever with renal syndrome associated with the Puumala virus species of Hantavirus. The pathogenesis of NE is not well understood; therefore, investigating the inflammatory cytokine response to infection may provide useful knowledge in deciphering the pathophysiology of NE. Materials & methods: Using Luminex and ELISA, we analyzed the serum of 137 NE cases and 44 controls to investigate if serum cytokines associate with different clinical presentations. Results: Serum levels of TNF- $\alpha$  and IL-1 $\beta$  are associated with disease severity while upregulation of IL-6, CXCL10, CCL2 and CCL3 are associated with clinical presentation. Conclusion: Inflammatory cytokine kinetics associate with the severity and phase of NE. Our data support a role for inflammatory cytokines in the pathophysiology of NE.

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### Keywords

Cytokine, Hantavirus, HRFS, Nephropathia epidemica, Puumala virus