

## Study of Serum Neopterin in Early Assessment of Severe Dengue

**Chandrashekar C\***

*Associate Professor in Pediatrics Department, JSS Medical college, Mysore, Karnataka, India*

**\*Corresponding Author:** Chandrashekar C, Associate Professor in Pediatrics Department, JSS Medical college, Mysore, Karnataka, India.

**Received:** March 21, 2017; **Published:** March 22, 2017

Dengue fever is a mosquito-borne disease that occurs in tropical and subtropical areas of the world.

Millions of cases of dengue infection occur worldwide each year. Dengue fever is most common in Southeast Asia and the western Pacific islands, but the disease has been increasing rapidly in Latin America and the Caribbean. With more than one-third of the world's population living in areas at risk for infection, dengue virus is a leading cause of illness and death in the tropics and subtropics. As many as 400 million people are infected yearly.

Neopterin is a catabolic product of guanosine triphosphate (GTP), a purine nucleotide.

Neopterin belongs to the chemical group known as pteridines. It is synthesized by human macrophages upon stimulation with the cytokine interferon-gamma and is indicative of a pro-inflammatory immune status. Neopterin serves as a marker of cellular immune system activation.

Neopterin measurement can be a very useful screening test when there is an outbreak of newly emerging infectious disease.

Increased neopterin concentrations in body-fluids, such as serum or urine, are connected with diseases linked with cellular immune response e.g. viral infections, including human immunodeficiency virus (HIV) infection and infections by intracellular bacteria or parasites, autoimmune diseases, inflammatory diseases. Neopterin concentrations are closely linked with the progression of these diseases.

During immune response triggered by viral infections neopterin is generated and released in increased amounts by human macrophages upon activation by interferon-gamma, released by T-lymphocytes and natural killer cells. Accordingly, determination of neopterin concentration in body fluids is useful for the monitoring of cellular immune activation in various disease.

Neopterin concentration was found to be higher in patients with dengue when compared with other viral infections like measles, influenza and healthy controls. So, detection of serum neopterin in dengue fever helps in assessing dengue severity. This would help in early diagnosis requiring more intensive care of the patient and prevent mortality.

The neopterin level in the early stages of dengue patients may be a sensitive indicator for estimation of the severity of the disease. To date there are only few studies on the importance of neopterin in dengue infected patients available in the scientific literature.

So, there is a need for neopterin studies in detecting severity of dengue fever so we can prevent mortality in dengue fever.

**Volume 3 Issue 6 March 2017**

**© All rights reserved by Chandrashekar C.**