

veloped a large number of biological assays and screening protocols to carry out studies on the biological activity of compounds against various diseases<sup>4</sup>. The institute today wishes to invite all interested researchers in the country and from all over the world to participate in its drug discovery, delivery and development programs on collaborative/partnership modes. This is an appeal, especially to all those like-minded organic chemists who are genuinely interested to take their research to a higher level of practical application and want to work with a dedicated scientific community in

the translational mode of drug development without worrying too much about personal credits and royalties, not to let go a golden opportunity like this. With your active participation and cooperation, we can make it a real game changer for new drug discovery in the country. Let us join hands and work together to find ways and means to provide affordable healthcare to millions of underprivileged people in the world.

1. Open Source Drug Discovery; <http://www.osdd.net>

2. OSDD Chemistry Outreach Program; <http://crdd.osdd.net/osddchem>
3. OSDD Malaria Program; <http://malaria.osdd.net/home>
4. Biological assays available at CSIR-CDRI; <http://www.cdriindia.org/biologicalscr.htm>

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## Dengue and other unknown viral outbreaks in Warangal District, Andhra Pradesh, South India

All the villages and tribal hamlets of Warangal, Karimnagar, Khammam, Adilabad and neighbouring districts have been affected by viral outbreaks, with hospitals of various regions being flooded with patients suffering from viral fever. Most of the viral fever observed in these regions include dengue and other unknown viral pyrexia. Both male and female populations of all age groups have been severely affected. News reports from local media confirm death toll above 100 during the past two months, starting from the monsoon season with unknown fever and dengue.

This is the seventh consecutive year in which various viral outbreaks have hit these regions<sup>1</sup>. These areas experienced Japanese encephalitis<sup>1</sup> in 1979, HIV<sup>2</sup> in 2002, viral encephalitis (Chandipura virus)<sup>1</sup> in 2003, Chikungunya<sup>3</sup> in 2006, and endemic cases of dengue in 2009 and 2010, but these have now reached epidemic proportions.

Dengue virus was first isolated in Calcutta<sup>4</sup> in 1945. Since then, several outbreaks from different parts of the country have been reported during the last 50 years. Dengue virus belongs to the family Flaviviridae. It is spherical, 40–60 nm in diameter and contains an electron-dense core 30 nm in diameter. The genome is single-stranded RNA, about 11 kb in size. Three viral proteins are associated with the virion, the envelop, membrane and capsid. Dengue virus has four serotypes,

viz. DEN-1, DEN-2, DEN-3 and DEN-4. All four were recorded from India, but no serotypic information is available from this region.

Clinical manifestations of the patients from these region include high-grade fever ranging from 99°F to 102°F, platelet count 10,000 to 1 lakh, organomegaly, enlargement of gall bladder and liver, ascites, leucopenia, malalgia, headache, minimal right pleural effusion, free fluid in peritoneal cavity, nausea, vomiting, abdominal pain and gastroenteritis.

Some of the fevers were found to be positive for NS1 antigen, whereas some were positive for IgG and IgM antibodies of dengue. Rest of the samples was negative for the malaria, influenza and other known viral diseases.

Biochemistry of the patients' serum electrolytes (sodium, potassium, chlorides), liver SGPT, SGOT, bilirubin, blood picture, blood urea nitrogen and serum creatine was normal, except thrombocytopenia and leucopenia. Lungs were clear and cardiac profile was normal, no CNS involvement was observed.

Symptomatic treatment was initiated and thrombocytopenic patients were given single-donor platelet transfusion. Hospitalized and well-treated patients are surviving, but among the poor and rural communities mortality rate is increasing due to lack of proper medication. Now it is important to study why dengue and

other unknown viral outbreaks are rampant in this region.

Study should be directed towards serotyping of the virus strain prevailing in these regions for proper treatment. There is also a need to carry out research to find the etiological agent, its vector biology, environmental changes, rural and urban cycle, and reservoir host of the unknown viral agents of these regions by establishing at least a virology field laboratory.

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2. Radhakrishna, M., *J. Environ. Biol.*, 2007, **28**, 865–867.
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