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## Prevalence of dengue virus and their serotypes causing infection in eastern UP, India

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**Statement of the Problem:** Dengue is one of the most serious mosquito borne viral infections and in India it has dramatically expanded over the last few decades, with rapidly changing epidemiology. The spectrum of manifestations is ranging from asymptomatic/mild to dengue hemorrhagic fever (DHF), to a shock syndrome (DSS). Recent research shows that there is a clear shift in dengue virus (DENV) having mortality 0.5–3.5% in DENV-2. So, this study was conducted to know the prevalence of dengue by different methods, serotypes and its impact in epidemiology, mortality in UP, India.

**Methodology & Theoretical Orientation:** Prospectively designed study was performed and all laboratory records were analyzed. Blood samples were tested for dengue NS1 antigen, IgM antibodies, and nucleic acid detection by; dengue early NS1 enzyme linked immune sorbent assay (ELISA), IgM capture ELISA, and real time reverse transcriptase PCR (RT-PCR), respectively. Descriptive statistics were used and data were expressed in proportions. Nested RT-PCR was performed for serotyping.

**Findings:** Out of total 863 samples tested, 203 (23.52%) were found positive for dengue virus infection by combination of different methods with male preponderance (65%). Seasonal trend showed a gradual increase; starting from July with a peak in September (34.5%). The most common presentation was fever (97%), only 1% cases presented with hemorrhagic manifestations. Out of total of 203 cases, 176 (86.7%) patients had fever, 16 (7.9%) DHF and 11 (5.4%) had DSS. Dengue IgG prevalence increased with age, with the lowest (16.3%) in <20 years and the highest (78.3%) in 20-40 years. The range of platelet count was; 1,69,000-11000/cumm. A total of 189/863 (21.9%) specimens were positive for NS1, 64/863 (7.4%) for IgM and 177/863 (20.5%) positive by nested RT-PCR. Of 203 positive cases, maximum serotypes were 123 (60.6%) for DENV-2 and mixed serotypes in 06 (2.96%) patients. Mortality was seen in 15 cases (7.4%), with maximum occurring in 2016.

**Conclusion & Significance:** Dengue has established its transmission and high prevalence (23.52%) in UP with predominantly affecting adult males and preponderance by DENV-2 virus (60.6%). This study thus emphasizes the need for continuous sero-epidemiological diagnosis/surveillance for effective dengue control in India.

## **Biography**

Amresh Kumar Singh has expertise in different disciplines of Clinical Microbiology and Infectious Diseases Evaluation and passion in improving the health and wellbeing of people living in Eastern UP, India. He has published many national as well as international journals and has teaching experience in teaching MBBS students, BSc (Nursing), MSc (Microbiology) and MD. He participated in project for detection of antimicrobial resistance in Gram negative *bacilli*, and Gram positive *cocci* like, ESBLs, AmpC, MBLs, MRSA, VRE etc. He worked on diagnostic mycobacteriology (culture and antimicrobial sensitivity techniques including culture on standard media, BacT/ALERT® 3D system, Mycobacteria growth indicator tube (MGIT) and *Mycobacterium tuberculosis* direct detection methods), antimicrobial susceptibility testing in *M. tuberculosis* complex (MTBC) and NTM (conventional and DNA-based methods) like line probe assay and mutational study; Virology-especially in dengue virus, HIV, enteroviruses (AES), viral encephalitis, acute hemorrhagic viral infection for their diagnosis and; tissue culture techniques for PCR (conventional, nested, Real-time RT-PCR), DNA sequencing, spoligotyping, pulse-field gel electrophoresis, etc.

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