

# A Review of Dengue in Elderly

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**ABSTRACT:** *Changes in dengue epidemiological dynamics have contributed to a shift in the prevalence of the disease in the adult population. As compared to their younger counterparts, elderly people suffer from worse performance, rendering clinical treatment of this subpopulation especially difficult. We offer a summary of the latest literature on the changing dengue epidemiology in the elderly, the atypical characteristics of this population's clinical condition, with a focus on manifestations of serious diseases and problems in the current management strategies. Dengue in the aged is a field of growing concern but extremely understudied. To enhance detection, assessment of disease severity, and classify persons in this demographic that is expected to advance to serious disease, there is an immediate need to refine the existing diagnostic criteria. To compensate for the increased amount of comorbidities, management techniques in this demographic will have to be changed. In this population, the position of available dengue vaccines is unclear, and further research on their safety and effectiveness is urgently needed.*

**KEYWORDS:** *Clinical, Dengue, DHF, Elderly, Medical, Health care, Precautions, Risk factor.*

## INTRODUCTION

Dengue is an important arthropod-borne viral infection that poses a worldwide public health problem. An anticipated 3.9 billion human beings in 128 nations are at risk of infection and dengue virus infections account for almost 500,000 hospitalizations yearly. The occurrence of dengue has risen dramatically through the years, with the number of pronounced instances from member states of the World Health Organization (WHO) in South-East Asia, the Americas, and the Western Pacific growing from 2.2 million in 2010 to a few.2 million in 2015. Dengue is transmitted predominantly via the domestic *Aedes aegypti* mosquito, and to a lesser quantity, the peridomestic *Aedes albopictus* mosquito [1]. Belonging to the Flaviviridae circle of relatives, there are four awesome however carefully related serotypes of the dengue virus (DEN-1 to DEN-4). Contamination with any person of the four dengue serotypes can result in a huge variety of clinical manifestations, from a moderate undifferentiated febrile illness to classical dengue fever (DF), and lifestyles threatening excessive dengue [1].

Classical dengue fever (DF) is a clinical syndrome characterized utilizing an abrupt onset of fever, which can be followed with the aid of chills, asthenia, headache, unfashionable-orbital pain, backache, myalgia, arthralgia, anorexia, nausea and vomiting, diarrhea, and a generalized maculopapular rash. Modern leukopenia and thrombocytopenia are common for the duration of this febrile period. Petechiae, gum bleeding, and epistaxis can also arise. Symptoms start 4-10 days after the chew from an inflamed mosquito and usually last for 2–7 days. Initial dengue virus infections are normally slight or subclinical, although instances of intense number one dengue had been reported [3]. Healing from the infection offers lifelong immunity to that specific dengue virus serotype. But, cross-immunity to the opposite serotypes after healing is best partial and temporary. Subsequent infections by using other serotypes arise no longer from time to time and are related to an expanded danger of developing intense dengue due to the phenomenon of antibody-established enhancement by way of non-neutralizing antibodies. Excessive dengue is a doubtlessly fatal shape that is

characterized by plasma leakage main to fluid accumulation, respiration distress, severe bleeding, or organ impairment. Caution symptoms arise 3–7 days after the primary signs and symptoms alongside the abatement of the febrile section and manifest as intense belly pain, chronic vomiting, scientific fluid accumulation, bleeding from mucosal surfaces, lethargy, restlessness, liver growth, or laboratory findings of a growing hematocrit concurrent with a speedy lower in platelet counts. Fast deterioration, or even death, may additionally happen in the subsequent 24 to 48 hours if suitable clinical intervention isn't instituted at this level. DF has been recognized to occur in both youngsters and adults. But dengue hemorrhagic fever (DHF) has been traditionally recognized to be an ailment of older kids. In current years, instances of adult DHF were said in nations which include Cuba, Puerto Rico, Singapore, and Bangladesh. Although older adults account for handiest a minority of DHF instances, amounting to two% of DHF cases in Cuba (elderly >50 years), 7% in Puerto Rico (elderly > 60 years), and three% in Bangladesh (elderly > 58 years), the triumphing epidemiological developments seem to usher in the growing burden of sickness inside the aged. Moreover, with reports of accelerated mortality on this populace, there may be an urgent need to better recognize the management of older adults with dengue [2].

### MANAGEMENT AND PREVENTION OF DENGUE IN THE ELDERLY

Because of reduced physiological reserves, the effects of immunological senescence, elevated frequencies of co-morbidities with its associated poly-pharmacy, and the nuances of the clinical direction and effects of dengue on this populace, we advocate that the medical management of aged dengue have to be dealt with otherwise and with an extra warning. Regrettably, research in the control of dengue within the aged is scarce and plenty of modern management strategies are extrapolated from the overall populace. Appropriate fluid therapy is the cornerstone in the control of dengue. Decreased oral intake from poor appetite, improved gastrointestinal losses from vomiting and diarrhea, and plasma leakage can result in intravascular fluid deficits. The WHO 2009 recommendations endorse giving crystalloids for adults and youngsters with compensated shock, guided via evidence-based fluid control protocols with the calculated fluid deficit, weight-based fluid resuscitation over several hours, in-depth tracking of pulse strain, blood strain, and serum hematocrit, and rapid de-escalation of fluid resuscitation with first signs of medical development care. But, those algorithms were developed primarily based upon studies inside the well-known adult populace. Although scientific statistics are lacking, aged sufferers are expected to be at a far better chance of fluid overload from overzealous fluid remedies. That is similarly exacerbated through the increased danger of acute kidney injury and decreased myocardial features. Non-invasive technology to evaluate intra-vascular fluid reputation, which includes echocardiography or inferior vena cava ultrasound assessment for extent reputation, have to be completed, wherein available, to direct fluid remedy [3].

Including the complexities of fluid control in the aged, an examination observed that cardiogenic surprise turned into chargeable for 47.1% of all sufferers who developed surprise in a cohort of 162 dengue patients. This indicates that inotropic assist in preference to fluid replacement may be essential in an enormous share of sufferers with dengue surprise to hold adequate perfusion. An overzealous fluid substitute may additionally instead result in fluid overload and pulmonary edema. Medical trials on fluid alternative protocols in the elderly are urgently wished [4]. Although the threat of bleeding manifestations has been proven to occur much less regularly inside the aged, a take a look at observed that platelet transfusions had been executed more regularly in the elderly populace (23% vs 12%,  $P=0.02$ ). Based totally on

current literature, transfusion of blood merchandise is recommended only within the presence of severe bleeding or clinical suspicion of severe bleeding in an affected person with unexplained hypotension [7]. Prophylactic platelet transfusion in adults has been proven to be non-superior to supportive care in stopping bleeding and can instead be associated with damaging events which include anaphylaxis, transfusion-related lung injury, and fluid overload. In mild of this, greater emphasis ought to be placed on the sensible use of blood merchandise, specifically within the elderly who already pose a full-size mission in fluid control .

In hospitalized patients, the usage of indwelling clinical gadgets which includes vascular access and fluid repute tracking should be reviewed often and removed while not indicated, to lessen the danger of health center-obtained infections. Pre-existing ailments and polypharmacy in the aged pose demanding situations to managing dengue. In an examination from South India, 73% of elderly dengue sufferers (elderly 60 years and above) have been discovered to have massive hyponatremia which became attributed to continued diuretic use and bad oral intake during dengue [9]. Anti-platelet sellers, diet ok antagonists, and non-steroidal drugs might also boom the propensity for bleeding. A set of rules has been proposed to guide the management of anticoagulation therapy in such populations. Anti-hypertensive agents including beta-blockers could mask the tachycardia reaction of compensated dengue shock or exacerbate hypotension. The latest availability of the stay attenuated tetravalent chimeric vaccine, Dengvaxia (CYDTDV), developed by way of Sanofi Pasteur, opened avenues for dengue prevention past vector management. Currently, it's been certified in greater than 10 international locations, which include Mexico, Brazil, El Salvador, the Philippines, Costa Rica, and Singapore. The phase 3 studies carried out in Asia and Latin America only included members from 2 to 16 years old. Despite the fact that the protection statistics of the vaccine seem robust among adults, there may be presently no efficacy studies in adults or the aged. Similarly, research into the protection and efficacy of the vaccine within the adult and the elderly population is eagerly awaited [5].

## CONCLUSION

Dengue in the aged is an increasing number of the critical yet significantly understudied place. Cumulative evidence up to now indicates that medical manifestations are odd, making the prognosis and management of older adults with dengue challenge. There's an urgent want to refine the modern-day diagnostic standards and perceive people in this population who are likely to progress to extreme disorder. Management techniques on this populace would be adjusted to account for the accelerated quantity of co-morbidities, and an apparent increase in case fatality. The function of the to be had dengue vaccines on this population institution is uncertain, and extra studies into their safety and efficacy are urgently wished.

### Key issues

- Current epidemiological trends have proven a sluggish shift within the burden of dengue from the pediatric to the adult populace. The prevalence of dengue happening in the elderly has been growing, therefore.
- Dengue in the elderly presents atypically with fewer medical signs and symptoms and symptoms. The cutting-edge diagnostic criteria do now not carry out as nicely on this organization.

- The aged are at a higher chance of growing severe dengue. This has a tendency to give extreme cease-organ involvement rather than hemorrhagic manifestations. Severe plasma leakage may occur more generally as well.
- Aged sufferers with dengue have a better risk of mortality, are much more likely to have an extended health center life, and are at better danger of sanatorium-obtained infections.
- Control of elderly patients with dengue is challenging. Really appropriate fluid management with the correct assessment of volume repute and cardiac function is critical to avoid inflicting fluid overload and to manual appropriate initiation of inotropes. Clinicians ought to be cautious of the capacity interactions among the aged patient's persistent co-morbidities, medications, and the medical route of dengue.
- The efficacy and safety of these days available dengue vaccine has now not been well mounted within the elderly population. More research is urgently needed to delineate its role in this populace.

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