
DENGUE OUTBREAK - IS THE PANIC JUSTIFIED ?

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Outbreaks, defined as excess cases of a particular disease or illness which outweighs the response capabilities, have the capacity to overwhelm health care facilities and need timely response and attention to details in order to avoid potentially disastrous sequelae. In this day and age when improvement in public health practices have significantly curtailed outbreak of various diseases, certain viral illnesses continue to make headlines. One of the notable vector borne infectious disease affecting significant portions of south east Asia in the early part of twenty first century is 'Dengue fever'. Dreaded as it is by those suffering from the illness, a lot of the hysteria created is secondary to a lack of education and understanding of the nature of the disease and at times a result of disinformation campaign for vested interests by certain political and media sections.

'Dengue' in fact is a Spanish word, assumed to have originated from the Swahili phrase - ka dinga peppo - which describes the disease as being caused by evil spirit. ¹ Over the course of time it has been called 'breakbone fever', 'bilious vomiting fever', 'break heart fever', 'dandy fever', 'la dengue' and 'Phillipine, Thai and Singapore hemorrhagic fever' Whilst the first reported case referring to dengue fever as a water poison spread by flying insects, exists in the Chinese medical encyclopedia from Jin Dynasty (265-420 AD), the disease is believed to have disseminated from Africa with the spread of the primary vector, *aedes egypti*, in the 15th to 19th century as a result of globalisation of slave trade ⁴⁵

In 80% of the patients affected by this condition the presentation is rather insidious and at best characterized by mild fever. The classical 'Dengue fever' present in about 5% of the cases is characterized by high temperature, body aches, vomiting and at times a skin rash. The disease may regresses in two to seven days. However in rare instances (<5%) it may develop into more serious conditions such as Dengue hemorrhagic fever whereby the platelet count is significantly reduced leading to bleeding tendencies and may even culminate in a more life threatening presentation i.e Dengue shock syndrome.⁶

To understand the actual dynamics of Dengue epidemic it is important to understand the mode of its spread in affected areas. *Aedes mosquito* (significantly *Aedes Egypti*) acts a vector for this disease. Early morning and evening times⁷ are favoured by these mosquitos to feed on their prey. There is some evidence that the disease may be transmitted via blood products and organ donation. ⁸ Moreover vertical transmission (mother to child) has also been reported ⁹

Diagnostic investigations include blood antigen detection through NS-I or nucleic acid detection via PCR. ¹⁰ Cell cultures and specific serology may also be used for confirming the underlying disease. Whilst sporadic and endemic cases are part of routine medical practice and may not raise any alarm bells, outbreaks certainly need mobilization of appropriate resources for effective control. Needless to say 'prevention is better than cure' and should be the primary target of the health authorities in devising strategies for disease control.

The WHO recommended 'Integrated Vector control programme', lays stress on social mobilisation and strengthening of public health bodies, coherent response of health and related departments and effective capacity building of relevant personnel and organisations as well as the community at risk. For *Aedes Egypti* the primary control revolves around eliminating its habitats such as open sources of water. In a local perspective in our city Peshawar, venue of the recent dengue epidemic, it may be seen in the form of incidental reservoirs such

as receptacles and tyres dumped in open areas such as roof tops with rain water accumulating in them and providing excellent breeding habitats, Larvicidal and insecticides may be added to more permanent sources such as water tanks and farm lands. There is not much of a role for spraying with organophosphorous agents which is at times resorted to for public consumption. Public education is the key to any effective strategy which must highlight the need for wearing clothing that fully covers the skin, avoiding unnecessary early morning and evening exposure to vector agents, application of insect repellents and use of mosquito nets. It is also important not to panic if affliction with the disease is suspected as in a vast majority of instances it is a self limiting illness without any long term harmful effects and needs simple conservative management like antipyretics and analgesics.

An important consideration for responsible authorities in a dengue epidemic is to ensure that maximum management facilities for simple cases are provided at the community level through primary and secondary health care facilities and that the tertiary care hospitals are not inundated with all sort of patients demanding consultation. These later facilities should be reserved for those patients who end up with any complications or more severe manifestation of the disease.

Research is underway to develop an ideal vaccine for Dengue fever. In 2016, a vaccine by the name 'Dengvaxia' was marketed in Phillipines and Indonesia. However with development of new serotypes of the virus, its efficacy has been somewhat compromised.

As for treatment, there are no specific antiviral drugs. Management is symptomatic revolving mainly around oral and intravenous hydration. Paracetamol (Acetaminophen) is used for fever as compared to NSAIDS such as Ibuprophen infusion as well as blood and platelet transfusion.

Data to date shows that slightly more than twenty three thousand people have been diagnosed with dengue over the past three months ie August to October there is a lower risk of bleeding with the former. Those with more severe form of the disease may need Dextran 2017, in Peshawar, Pakistan with around fourteen thousand needing admission and about sixty nine recorded deaths. The mortality is well within the acceptable international standards of less than 1% for the disease. In the backdrop of all the debate surrounding the current epidemic, one can infer that such outbreaks are best addressed with effective planning well ahead of the time before the disease threatens to spiral out of control. Simple measures such as covering water storage facilities, using larvicidals where practical, use of insect repellents, mosquito nets and avoiding unnecessary exposure can offer the best protection. Public health messages via print and electronic media can help educate people in affected areas and allay any anxiety building up from a fear of developing life threatening complications. Health department must mobilise all its resources to ensure local management of diagnosed patients with simple dengue fever and facilitate hospital admission only for those suffering from more severe form of the disease. Moreover the media hype into such situations needs to be addressed through constant updates and discouraging any negative politicking on the issue. To sum up Dengue fever is not really an affliction to be dreaded provided it is viewed and managed in the right perspective.

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