

Monsoon Fevers – The Lessons to be Learnt

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Kerala is lashed by two monsoons – the South West Monsoon in June, July, August and September followed by the North East Monsoon which is active in October, November and December. The monsoon season brings along with copious rain (an average precipitation of over 100 cms), a flurry of febrile illnesses that affect all age groups especially the very young, the very old and the compromised sections. These illnesses are caused by a variety of reasons and the major cause could vary with each year.²

Dengue is one of the most serious and fast emerging tropical diseases which in certain socio-ecologic settings exacts disease burden that can only be paralleled with that of malaria. Dengue with its two severe clinical manifestations – dengue haemorrhagic fever (DHF) and dengue shock syndrome (DSS) poses an increasingly perilous situation due to lack of specific antiviral drugs or vaccine.³

CLINICAL SCENARIO

As in earlier years an epidemic of short febrile illness was present during the last monsoon season (June, July, and August 2017) also. This year most of the cases of febrile illness were due to Dengue fever which constituted nearly 70 %, others were due to non specific viral fever which formed 20%, and the rest of the patients are due to specific cause like acute respiratory tract infection and urinary tract infection.

A major health concern was Dengue Fever which presented with varying features. Conventionally four types of presentation namely undifferentiated fever, Classical Dengue fever; Dengue Hemorrhagic fever and Dengue shock syndrome are recognised. The last two are grouped as severe types of Dengue fever.

In the ongoing presentation of the epidemic this year - the dengue fever was featured by a short febrile ill-

ness of duration 2-7 days with myalgia headache and orbital pain. Hematological manifestations were mainly thrombocytopenia with or without leucopenia and a few had monocytosis more than 10%. Another feature was hepatitis with elevation of liver enzymes without hepatic encephalopathy. More than 50% of patient having serositis like ascites and bilateral pleural effusion as a part of capillary leak syndrome which results in Dengue shock syndrome.

The most highlighted problem faced in Dengue fever was thrombocytopenia. It has varying mechanisms - cytoadherence is the main mechanism due to defect in cleavage protein Adam TS 13 for the removal of VWB factors.

Severe Dengue fever is featured by shock syndrome and severe haemorrhage and organ involvement like hepatitis with enzyme elevation more than 1000, lung involvement like ARDS or DAH, cardiac manifestations like myocarditis and arrhythmia, CNS infections like encephalitis. Conventional management of Dengue fever without complication are antipyretics, care of fluid balance, preferably IV crystalloid – Normal Saline to counter act capillary leak and watch for the development of complication.

Regarding thrombocytopenia if there is bleeding with platelet count less than 50000, or platelet count less than 20000 with / without bleed, platelet transfusion (single donor) with fresh frozen plasma is advisable. Organ dysfunction management is according to the severity of involvement of the organ.

Strategies for Fever Control

The management of the febrile illness especially dengue fever has to be standardized to reduce morbidity, minimize hospital admissions and prevent deaths. The high volume of cases reported in this period coupled

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with the mortality of many severe cases created a furore in the media accusing the administration of mismanagement and demand for more facilities and strict supervision from the health authorities. The Research Cell of the Kerala State branch of Indian Medical Association issued a document “Strategies for fever control” after internal discussions to help its members tide over the grave situation.¹ It resolved to disseminate the guidelines issued by the Government among its members, suggest suitable modifications if needed after internal discussions to the official document. The document contains instructions on management of fever, medical resources, public participation, source reduction, media, clinical research and dealing with unscientific approaches.

TREND ANALYSIS

Traditionally Kerala had a good record in combating communicable diseases. The unique model of Kerala state is witnessing newer challenges in its public health arena. The rapidly increasing migrant workforce from the relatively poorer states of India, rapid urbanization and its consequent stress on public health, unsolved issues of urban waste disposal, re-emergence of many communicable diseases like malaria and of many zoonotic diseases like scrub typhus and vector born disease such as dengue.

A study was conducted to study the communicable disease scenario and perform trend analysis of the communicable diseases such as Dengue, Malaria, Leptospirosis, Cholera and Scrub Typhus in the state of Kerala for the years 2013 -2015.² Scrub Typhus has the major burden among the communicable disease in which the number of cases increases from 18 (2013), 433 (2014), 1098 (2015) respectively, Leptospirosis increases from 2013 (800), 2014 (1075), 2015 (1098). In case of dengue the cases decrease from 2013 (6000) to 2014 (2000) then a slight increase in the year 2015 (4000). Malaria cases increase from 2013 (1600) to 2014 (1800) decrease to 2015 (1500). In case of cholera the number of cases reduced drastically from 2013 (20) to 2014 (8) to 2015 (1). Outbreak of these communicable diseases need investigation by the Department of Health and Family Welfare and the local bodies have to look into this matter seriously; appropriate measures such as vector control and public education about the disease and its mode of transfer should be addressed.

Prevention Strategies

The key to control of both - dengue fever and DHF/DSS is the control of *A. aegypti*, which also reduces

the risk of urban Yellow fever and Chikungunya virus circulation.

Aedes aegypti typically breeds near human habitations, using relatively fresh water from sources such as water jars, vases, discarded containers, coconut husks and old tyres. This mosquito usually inhabits dwellings and bites during the day.

Vector control includes simple measures like eliminating larval habitats, using insect repellents/indoor space-spray insecticides and mosquito nets while sleeping. Closed habitations with air-conditioning inhibit transmission.

Control efforts have been handicapped by the presence of non-degradable tyres and long-lived plastic containers in trash repositories, insecticide resistance, urban poverty, and an inability of the public health community to mobilize the populace to respond to the need to estimate mosquito breeding sites.

Live attenuated dengue vaccines are in the final stages of development and have produced promising results in the early tests. Whether vaccines can provide safe, durable immunity to an immune-pathologic disease such as DHF/DSS in endemic areas is an issue that will have to be tested, but it is hoped that vaccination will reduce transmission to negligible levels.

Therefore, programs will have to be designed to monitor the resistance of *Aedes aegypti* to insecticides in our country. This assumes greater importance now as dengue is rapidly emerging as a major threat to public health in India.

END NOTE

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