

NEWS

Dengue: A hidden epidemic in India

Dengue is a serious global public health problem infecting about 50 to 390 million people each year in more than 100 countries and causes mortality in at least 20,000 individuals annually.^[1] More than 10,683 dengue cases has been admitted in the year 2015 in New Delhi alone, and India has reported its worst outbreak of dengue in the last 20 years. Systematic empirical data from Brandeis University's Schneider Institute for Health Policy in Waltham, Massachusetts, the INCLIN Trust International in New Delhi, and the Indian Council of Medical Research's Centre for Research in Medical Entomology (CRME) in Madurai have reported 6 million dengue fever cases annually in India, which is considered to be 282 times higher than officially reported cases annually. This epidemic outbreaks inflicts an economic burden on the country of at least US\$1.11 billion each year to treat patients infected with the mosquito-borne disease.^[2] Especially, India is believed to have more cases of dengue than any other country in the world, and the incidence rate has grown steadily in recent years. It has been reported that among 1,010 people tested for Dengue in Chennai region, nearly all of them were exposed to

dengue.^[3] However, almost none of the participants who had been exposed to dengue reported having been infected by it, either because they were not properly diagnosed with the disease or because they did not show any symptoms. Though dengue has been known to be present in India since the 1940s, it is only in the past few years the magnitude of the problem has been recognized. Early recognition and prompt supportive treatment should be adopted to substantially lower the risk of medical complications and death.

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Alzheimer's disease emerging as type 3 diabetes

Alzheimer's disease (AD) is the major age-dependent disease of the brain. Studies have established a potential relationship between diabetes and pathogenesis of AD. Diabetic patients are at increased risk of developing AD later in life compared to those who do not have diabetes. The higher risk applies to both type 1 and type 2 diabetic patients, as hyperglycemia is a common pathogenic factor.^[1] Researchers have observed increased formation of amyloid beta peptides in alloxan-treated diabetic rabbit models,^[2] which is found in Alzheimer plaques in neurons of the brain. The 'amyloid beta-derived diffusible ligand' is a toxic protein found in the brains of individuals with Alzheimer's, which plays a major role in altering the memory-forming synapses.^[3] Studies demonstrating the emergence of such AD pathology in diabetic patients and their link to the progression of the disease state, sheds light on the emerging idea of Alzheimer's being a 'type 3'

diabetes. Researchers have found that the mutation in the amyloid precursor protein gene^[4], which is known to be present in many Alzheimer's disease patients, affects the insulin pathway. Disruption of this pathway is a hallmark of diabetes. Researchers have also found that drug intended for diabetes reduces amyloid-beta peptides, a major component of AD in the brain and improves learning and memory in experimental AD models.^[5] Therefore, considering AD as a 'third form of diabetes' may provide a new avenue for both treatment and diagnosis of AD.

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Bariatric surgery: Beyond weight loss

Bariatric surgery is the most effective treatment of morbid obesity with a proven survival benefit. To view bariatric surgery as simply a weight loss procedure might lead to inappropriate expectations and potentially dangerous consequences. Recently, a work by Bhatti *et al.* have reported that the incidence of self-harm emergencies in patients undergoing bariatric surgery is twice as that of general population and increases by additional 50% in postoperative period. Out of the 8,815 patients studied 111 patients had 158 self-harm emergencies such as medications, alcohol, poisoning by toxic chemicals, and physical trauma during the 3 year follow up. Although a few patients had self-harm emergencies, the risk of these emergencies

was significantly increased after surgery. Intentional self-poisoning by medications was the most common mechanism of attempted suicide. Suicidal rates in patients undergoing bariatric surgery are 4 times higher than the general population. Moreover, it has been reported that patients who had bariatric surgery have 2.3 times higher chance of fractures compared with the general population, as opposed to the 1.8-fold increased risk found initially before the surgery. Recent evidence recommends a multidisciplinary management in patients undergoing bariatric surgery both before and after surgery, from dietary care to psychological support. Therefore, it is time we recognize bariatric surgery more than just an operation for weight loss.

Antioxidants hastens cancer metastasis

Antioxidants are substances which prevents or delay cell damage from free radicals. It is well established that free radicals accumulation causes cancer. Hence, it is assumed that increased antioxidants might scavenge the free radicals and has been considered as a supplement for preventing cancer. Researchers at University of Gothenburg demonstrated that mice that were administered with antioxidants aggravated the progression of lung cancer and doubled the rate of metastasis in malignant melanoma. Experimental cell cultures have confirmed that antioxidant supplements protects healthy cells from turning into malignancies but

also protects the tumor cells once developed. Clinical researchers suggest antioxidant supplements to be avoided in newly diagnosed cancer patients, as they play a role in disease progression.

Address for correspondence:

Dr. Lalitha Venugopal,
Department of Physiology,
Indira Gandhi Medical College and Research Institute,
Kathirkamam, Pondicherry – 605 014, India.
E-mail: lalitha.jipmer2010@gmail.com