

EMERGENCE AND RE-EMERGENCE OF INFECTIOUS DISEASE: A GLOBAL PREDICAMENT

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The concept of disease and their care is as old as Hindu civilization, probably some five thousand years old! We have seen, cared, cured, controlled and eradicated hundreds of morbidities and sufferings. Nevertheless, in spite of significant advances in medical research and treatments during the 21st century, infectious diseases remain among the leading causes of death world over, although the non-communicable diseases are increasing day by day. It is difficult to say whether the non-communicable diseases are actually increasing or we have improved our diagnostic tool to uncover them, as on day, but communicable diseases still are challenging us every dawn. There are three reasons why communicable diseases are downheartedly bothering us:

- Emergence of new infectious diseases;
- Re-emergence of old infectious diseases; and
- Persistence of intractable infectious diseases.

Emerging diseases include outbreaks of previously unknown diseases like the famous HIV/AIDS, Ebola or the “new infectious” disease of unknown aetiology like Noma or threatening diseases whose incidence in the mankind has been significantly increasing in the past two decades. Diseases which were known earlier and re-emerging now or have reappeared after a significant decline, have also created some tempests in front of the world. On the other hand, our own credibility in innovative research, improved diagnostic techniques and detection procedures have revealed a number of previously unknown human pathogens; viz:

chronic gastric ulcers, which was formerly thought to be caused by stress or spicy diet, are now found to be the result of the bacterial infection with *Helicobacter pylori*. A very well known example of a non-communicable disease being converted to an infective suffering.

Noma (cancrum oris) is a re-emergence of old type of shattering disease, seen almost exclusively in young children living in remote areas of less developed countries, of some gangrenous condition that leads to severe tissue destruction around the mouth and face, and is associated with high morbidity and mortality. It is particularly seen in Africa, which is the epicentre of many newer re-emerging conditions. A conservative estimate shows, 770 000 people are currently affected by Noma sequelae.[1] The cause and the total exact number of sufferers remain still unknown, although a combination of several elements of a plausible aetiology has been speculated as malnutrition, compromised immune system, poor oral hygiene and a lesion of the gingival mucosal barrier, as well as an unidentified bacterial factor acting to trigger the disease. The treatment of the acute phase of Noma and its sequelae require reconstructive surgery. Noma may be preventable if recognized at an early stage. Further research is needed to pin point the causative agents.[1,2]

Is the concepts of Hinduism stands true even today; that Food, Fast, Festival, Favour of worship and Following Yoga give the human life the safest pathway to live? And not following those five Fs, may lead to new evil of infectious diseases! Is the spiritual health the answer to the miseries? Changes in the human life style, Demographics, behavior, land use, etc. are

probably contributing to new disease emergence by changing transmission dynamics to bring people into closer and more frequent contact with pathogens was the concept in ancient India and is also agreed by the civilized world today. This newer life style is involved exposing to animal or arthropod carriers / transmitters of disease. Increasing trade in exotic animals for pets, as food and sex sources has many times contributed to the rise in opportunity for pathogens to jump from animal reservoirs to humans.

To justify the above, it is known that, close contact with exotic rodents imported to the United States through the pets, the recent U.S. outbreak of monkey pox, and use of exotic civet cats for meat in China causing the SARS due to corona virus clearing the path way from animal to human hosts². So as the famous AIDS and poor Ebola, who have started, possibly, from Africa because of animals as well as the Swine or Avian flu from other species than human beings! Natural genetic variations, recombination's, & adaptations have allowed new strains of known pathogens to appear to which the immune system has not been previously exposed and is therefore not primed to recognize e.g. influenza. Until recently, the global war of anti-infectious diseases appeared to achieve victory. The advent of these new infectious diseases and the re-emergence of old ones in the world appear to be a weird and have precipitated a new health crisis which threatens to destroy the achievements made so long.

New and emerging diseases combined with the rapid spread of pathogens resistant to antibiotics and of disease-carrying insects resistant to insecticides, are the daunting challenges to human health today. The National Institute of Allergy and Infectious Diseases (NIAID) is one of the 27 centers that make up the National Institutes of Health (NIH), an agency of the United States Department of Health and Human Services (HHS). NIAID's mission is to conduct basic and applied research to better understand, treat, and prevent infectious, immunologic, and allergic diseases.^{3,4} NIAID has established a reputation for being on the cutting edge of

scientific progress both through its intramural laboratories and through the research it funds at academic institutions. It helped develop of FDA-approved vaccines for influenza (FluMist), hepatitis A (Havrix), and rotavirus (RotaShield). NIAID also was instrumental in the development and licensure of acellular pertussis vaccines, conjugate vaccines for *Streptococcus pneumoniae* and *Haemophilus influenzae* type b or Hib, and a preventive therapy for respiratory syncytial virus or RSV (Synagis). Additionally, NIAID led to the advancement of diagnostic tests for several important infectious diseases, including malaria (ParaSight F), tuberculosis (GeneXpert MTB/RIF), and norovirus (Ridascreen Norovirus 3rd Generation EIA), study of HIV/AIDS and demonstrated that the drug AZT.[1,2]

A huge number of researches are being undertaken in understanding how the immune system functions when it is healthy or unhealthy and provides the basis for development of new diagnostic tools and interventions for immune-related diseases. The medical science has still not understood all systems and all causes of all morbidities even today, may be for all times to come. We are not clear today, how aberrant responses of the immune system play a critical role in the development of immune-related disorders such as asthma, allergies, autoimmune diseases, and transplant rejection. settings to breastfeed their infants safely.⁵ All over the world medical fraternity is baffled by new diseases, and their sources and they have no name to give them or treatments to recommend. Some new illnesses may, however, be caused by the human body's incompatibility with modern chemicals and other conditions it has not had to cope with in history. Daniel Lieberman, a biology professor at Harvard University claims, diseases such as asthma, diabetes, and irritable bowel syndrome that may be caused by the modern lifestyle. National Institutes of Health (NIH) has an Undiagnosed Diseases Program (NDP) dedicated to unraveling the mysteries of new diseases. Syndrome without a name (SWAN) groups have popped up around the world to support people living in uncertainty with undiagnosed diseases.

Seven rare diseases that have been identified in recent years, though much remains to be learned about them and the causes of some are a complete mystery are being discussed. Morgellons disease has stoked controversy. Some claim this rare disease is caused by chemtrails. Famed environmentalist David Suzuki sums up the “chemtrails” idea. Chemtrails believers claim “governments around the world are in cahoots with secret organizations to seed the atmosphere with chemicals and materials-aluminum salts, barium crystals, biological agents, polymer fibres, etc for a range of nefarious purposes. These include controlling weather for military purposes, poisoning people for population or mind control, and supporting secret weapons programs.” The Mayo Clinic describes the disease as “an unexplained skin disorder characterized by disfiguring sores and crawling sensations on and under the skin. Morgellons disease also features fibers or solid materials emerging from these sores.”[6,7]

NIH’s Undiagnosed Diseases Program discovered the first American case of CHST-14 deficiency, characterized by malformations of the thumbs and feet, as well as pockets of blood that build up under the skin. Similarly, Prune Belly Syndrome also called Eagle-Barrett syndrome is the third condition having three main features:

- Lack of abdominal muscles, causing the skin on the belly to wrinkle like a prune
- Undescended testicles in males.
- Urinary tract problems.



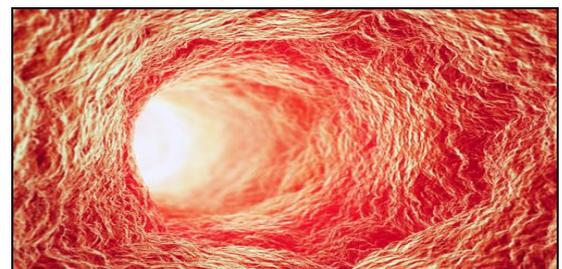
Screenshot/Google Images of Morgellons disease

According to NIH, prune belly syndrome affects 1 in 40,000 births. The cause of the condition is unknown. Only recently the third mysterious disease was reported. Mysterious Calcium Build-Up in Arteries and Joints was first reported in

2011 by NIH, USA. It’s a rare condition caused by a build up of calcium in the arteries and in the joints. Before 2011, when NIH encountered the disease in nine individuals from three families, it was only recorded in seven patients over the course of a century. NIH named it “arterial calcification due to CD73 deficiency” (ACDC). There are unknown causes of blindness reported by NIH. DeGalynn Wade, an attorney in Minneapolis, went blind and doctors could not figure out why. The symptoms that accompany other illnesses that cause blindness could not be found in her body. She turned to NIH’s program for help, reported the chief, but the cause of her blindness remains a mystery till date.[8]



File image of a blood blister. (Google Images)



CD73 Deficient blood vessels (Google Images)

The World Health Organization has labeled as “Idiopathic Environmental Intolerance” illnesses that may be caused by exposure to multiple chemical substances and to electro-magnetic fields common in modern society. The “idiopathic” is because the exact cause is unknown. WHO reported in the year 2013 that “research has not been able to provide support for a causal relationship between exposure to electro-magnetic fields and self-reported symptoms, or ‘electromagnetic hyper-sensitivity’ ”People who may be sensitive to electromagnetic fields report symptoms such as headaches, difficulty concentrating, joint and muscle pain, dizziness, and nausea.[5, 8]

The number of hospitalizations due to *Staphylococcus aureus* infections more than doubled from 1999 to 2005, according to the US Centers for Disease Control (CDC). This bacteria has developed a resistance to penicillin and other antimicrobial drugs. CDC explains on its website: “[*S. aureus*] is the primary cause of lower respiratory tract infections and surgical site infections and the second leading cause of nosocomial bacteremia, pneumonia, and cardiovascular infections” [9]

The list may increase each day. There are reports from Central America, from Southern Mexico to Panama, field

workers commonly stricken, 24,000 estimated deaths, since 2000, results in kidney failure.[1,2] In India (Muzzafarpur, Bihar), 47 dead, similar to Japanese encephalitis but Japanese encephalitis negative, 2011.[3,4] Again in 2012, some 233 children in Bihar have died, and it has been confirmed again as "not JE".[10, 11,12] Nodding syndrome, Uganda, since 1950s, etiology unestablished, though named 8,10.11,12. And so on....

There are numerous miseries and unknown conditions as well as mysteries affecting human life day in and out, might trying to prove the truth of the four testaments of Lord Buddha!

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