

SERUM TIMES

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SERUM MEDICAL BULLETIN

From the desk of the Editor-in-Chief

Dear Doctors/Readers,

We have entered into festival month. Durga Puja has been one of the biggest festivals of the world. Although the spread of COVID-19 is slowing down but the scientists and experts have been predicting a third wave of the virus. So, we should be very restrictive about observing the festival by maintaining COVID-19 restrictions. Kerala may be our one of the most glaring examples in this matter.



After Onam festival the spread of COVID-19 is very high but one good sign is that the death rate is not comparably high. This is due to the fact that the health infrastructure of Kerala is praiseworthy.

In this issue we are going to discuss about some selected viruses. The RNA and DNA virus have been the matter of discussion in this critical time. This is because corona virus is an RNA virus. It is more infectious than DNA virus. Additionally, HIV (human immunodeficiency virus) will also be discussed. This is also a virus and many people have different misconception about HIV. Many people are panicked about the disease. No doubt it is a dangerous disease and cannot be cured if someone gets infected. But can be controlled only with proper medication.

It is known that HIV is transmitted via the exchange of variety of body fluids from infected people. The fluids are blood, breast milk, semen and vaginal secretions. It can also be transmitted from a mother to her child during pregnancy and delivery. Notably, it is not infected through day-to-day contacts like kissing, hugging, shaking hands or sharing personal objects, food or water.

Global situation of HIV

HIV has been a major public health issue. It has claimed 36.3 million lives so far. The WHO report of July 14, 2021 mentioned that there were an estimated 37.7 million people living with HIV at the end of 2020. Out of these more than 2/3rd of it is of African region. In 2020 alone 680,000 people died from HIV related causes and 1.5 million people acquired HIV. In the WHO report it is pointed out that serious effort is needed to avoid the worst-case scenario of half a million excess HIV related deaths in sub-Saharan Africa. The WHO reports also pints out that HIV infection has increased during Covid period due to service disruption including slowing public health response to HIV.

Hope by now all of you have been vaccinated. Stay safe, happy Puja festivals.

With best wishes,

Sanjib Acharya

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People's interest growing about RNA, DNA, and HIV viruses

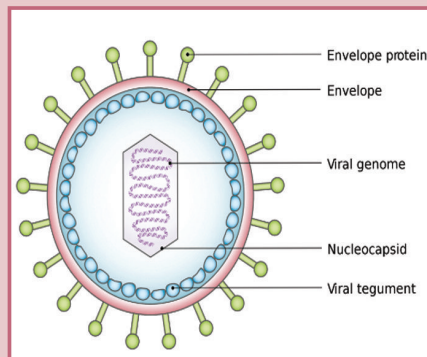
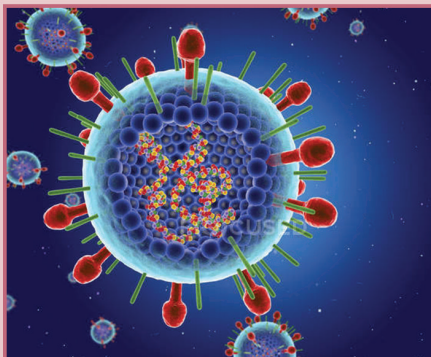
In what ways DNA (Deoxyribonucleic Acid) and RNA (Ribonucleic Acid) viruses differ: Firstly, the DNA virus is mostly double stranded while RNA virus is single stranded. Secondly, RNA mutation rate is higher than that of DNA. Thirdly, DNA can self-replicate and replication takes place in the nucleus. On the other hand, RNA cannot self-replicate and replication takes place in the cytoplasm. Fourthly, DNA virus is stable while RNA virus is unstable. DNA can be found in mitochondria and plant cells. But RNA is found inside the nucleus. Fifthly, DNA is the genetic material in all living organism but RNA is the genetic material in some viruses. Lastly, life of DNA is longer whereas life of RNA is shorter.

What type of virus is HIV?

HIV is a virus that attacks the body's immune system. It cannot be cured but if it is not treated it can lead to AIDS (Acquired Immuno Deficiency Syndrome). HIV belongs to a class of viruses known as retroviruses. Retroviruses use RNA to encode their genetic information rather than DNA, as human cells do.

CD4 cells and its function

HIV cannot replicate on its own. For replication it must infect cells of the human immune system, called CD4 cells. CD4 cells are white blood cells that play a central in responding to infections in the body. Over time, CD4 cells are killed by HIV. As a result, body's ability to recognise and fight some types of infection begins to decline. If HIV is not controlled by treatment, the loss of CD4 cells leads to the development of serious illness. In people with normal



CD4 cells levels, these infections would be recognized and cleared by the immune system.

Signs, Symptoms, and Diagnosis of HIV

The symptoms of HIV depend on the stage of infection. People living with HIV tend to be most infectious in the first few months after being infected. Even many are unaware of the status. In the later stage symptoms are swollen lymph nodes, weight loss, fever diarrhoea and cough are common.

It can be diagnosed through rapid diagnostics tests that provide same day results. But no single test can provide a full HIV diagnosis. Confirmatory diagnosis required well equipped clinic. For children less than 18 months of age, virological testing must be provided as early as birth at six weeks of age.

Million lives can be saved only by cutting sugar in packaged food

A recent study has observed that only by reducing sugar from some specific packaged food lives of millions can be saved. The study has observed that by reducing sugar, millions of cardiovascular diseases such as stroke, heart attacks and cardiac arrests can be lowered by a considerable extent. The new study has also estimated that cutting 20% of sugar from packaged foods and 40% from beverages could prevent 2.48 million cardiovascular events, 490,000 cardiovascular deaths, and 750,000 diabetes cases in the U.S. over the lifetime of the adult population. Although the new research was done on the basis of American population its implication has been far reaching importance for other population of the world.

It is reported that a team of researchers from Massachusetts General Hospital (MGH), the Friedman School of Nutrition Science & Policy at Tufts University, Harvard T.H. Chan School of Public Health and New York City Department of Health and Mental Hygiene have jointly done the research. The purpose of the study was to create a model to simulate and quantify the health, economic, and equity impacts of a pragmatic sugar-reduction policy proposed by the U.S. National Salt and Sugar Reduction Initiative (NSSRI).

Why is sugar containment in food a matter of concern?

Consuming sugary foods and beverages is strongly linked to obesity and diseases such as type 2 diabetes and cardiovascular disease. These are the leading causes of mortality in the US and many other countries. More than two in five American adults are obese, one in two have diabetes or are



pre-diabetes. Nearly one in two has cardiovascular disease. Along with this, persons from lower-income groups being disproportionately burdened. Not just sugar alone, the harmful nutrients like trans-fats and sodium are also need to be controlled. According to the model that the researchers formed 10 years after the NSSRI policy goes into effect, the US could expect to save \$4.28 billion in total net healthcare costs and \$118.04 billion over the life time of the current population, ages 35 to 79.

Actually, the findings of the study may be considered as a wake up call for not only the people of USA but also that of all the countries of the world. worldwide between 1990 and 2019.

CASE PRESENTATION by Dr. Sajeed Mondal (MD - Pathology) Consultant Pathologist

CASE PROFILE: 45 year old lady, resident of West Bengal presented with Bilateral Ovarian Solid SOL.

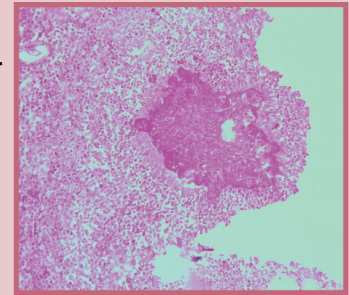
CT/USG REPORT: Suggestive of Malignant Ovarian Tumour.

GROSS: Both the ovaries were enlarged, right ovary was 10x8x5cm. Cut section was solid and firm.

DIAGNOSIS: Disseminated Actinomycotic Infection presented as Bilateral Ovarian SOL.

MICROSCOPIC FINDINGS: Multiple Sulphur Granules present. Confirmed by PAS stain.

INCIDENCE: Rarely reported in Literature. Also, except Tissue Diagnosis, no other modality would have confirmed it.



CSR Activities & Events of SERUM throughout September 2021

Sept 3: The inauguration of Serum Sharod Baran, 2021, at the Kolkata Press Club



Sept 5: Teachers Day Celebration



September 10



Celebrating India's triumph in Olympics & Paralympics and Ganesh Puja



Sept 17: Viswakarma Puja at SERUM Hatibagan

Blood Donation camps



Sep 5: at North Kolkata Brahman Samaj



Sep 4: at 38 no Block



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