

SERUM TIMES

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SERUM MEDICAL BULLETIN

From the desk of the Editor-in-Chief

Dear Doctors / Readers,

Hope you all are well. Serum Times has completed seven years of its successful journey. For this, thanks should go to you. This is because, without your constant support and comments, Serum Times could not move for years.



We are entering the New Bengali year. Almost in every issue, we have conveyed some messages & will continue to do so on how to be cautious against viral infections and diseases. After a long gap, the government of India has expressed concern over the revival of Covid 19. In mid-March, the Prime Minister convened a high-level meeting for discussion on the development of this. As of March 23, India officially reported 1,300 new coronavirus cases over 24 hours. So, the total active cases brought up to 7,605 as of now. One of them has died of this infection. So, don't be panicked but try to remain cautious and safe.

Eliminate TB

The 14th March World TB Day is observed. On this day, Dr. Robert Koch announced the discovery of Mycobacterium tuberculosis, the bacteria responsible for TB, in 1882. During that time TB killed one out of every seven persons living in the USA and Europe. In this issue, we are going to discuss Tuberculosis and its eradication in India. About 28% of all the TB patients in the world live in India. This is a major health problem in India. In India, on average 316 persons are infected per one lakh persons. India's government is targeted to achieve complete freedom from TB by 2025. But seemed doubtful about the fulfillment of the target within such a short time.

Causes and Symptoms of TB

When TB bacteria enter one's body, she/he cannot know and it may remain inactive. But when it starts developing the signs of TB become visible. TB can impact any organ like the kidneys, lymph nodes, bones, and joints in the body but around 80% of all TB cases are related to pulmonary or lung. Common symptoms include coughing that lasts for more than three weeks with green yellow or bloody sputum, weight loss, fatigue, fever, night sweats, chills, chest pain, shortness of breath, and loss of appetite.

There are some factors that help in spreading TB Bacteria, one of which includes a weak immune system. It spreads from person to person while talking, sneezing, coughing, and the like. Someone may be infected through mycobacterium into the air. So, population density and pollution are also factors for the high spread of TB. Diabetic, alcoholic, and undernourished persons are susceptible to TB infection with more possibility. TB is a fully curable disease if the proper medication is maintained. The next story will touch upon some specific problems related to TB.

With best wishes,

Sanjib Acharya

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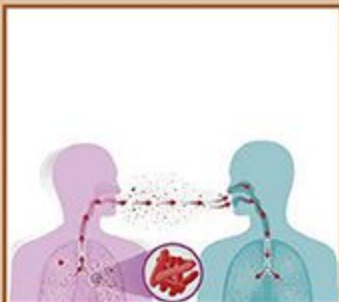


Status of TB and problems in treating it in India

First, around 10.6 million people across the world were diagnosed with TB in 2021. This figure is 4.5% more than that of 2020, according to World Tuberculosis Report 2022. The total death was 1.6 million from the disease. Out of the total deaths, 187,000 patients were also positive for HIV. Secondly, nearly 82% of global TB deaths among HIV-negative people occurred in the African and South-East Asia regions. The number of newly diagnosed TB cases fell from 7.1 million in 2019 to 5.8 million in 2020. There was a partial recovery to 6.4 million in 2021 but this was far below the pre-pandemic level.

Indian scenario: Out of the total cases in the world, 28% of cases of TB are in India. Followed by Indonesia (9.2%), China (7.4%), the Philippines (7%), Pakistan (5.8%), Nigeria (4.4%), and Bangladesh (3.6%). India accounted for 36% of the global TB-related deaths among HIV-negative persons.

India's major challenge - the rise in Drug Resistant (DR) TB: This has been a worldwide phenomenon. Globally DR TB has risen up by 3% between 2020 and 2021. As many as 450,000 new cases have been reported in 2021. The problem of under-reporting and underdiagnosis has also been very deep problems. But for India, under-reporting has been a bigger problem. It accounted for 24% of the global underreporting. This is followed by Indonesia (13%), the Philippines (10%), and Pakistan (6%).



Drug Resistant TB: There are two types of drug-resistant TB. One is multi-drug resistant (MDR) and extensive drug-resistant (XDR) is the other. MDR TB resists treatment by at least two frontline drugs in TB treatment - isoniazid and rifampicin. The XDR TB resists these two drugs as well as fluoroquinolones and any second-line injectable drugs. But XDR TB is rare compared to MDR TB. It is reported (in The Hindu on 26th March) that there were 124,000 cases of MDR TB in 2021 versus only 2,650 cases of XDR TB IN 2017. The TB incidence has been declining gradually in India.

How to treat drug resistant TB?

TB is treated strictly adhering to the doses and frequencies of drugs prescribed by a doctor. Deviation from this schedule can lead the bacteria to become drug-resistant. At the same time, it can happen with side effects of drugs that reduce the quality of life. At times patients cannot afford the requisite drugs on time. That may be a cause for drug resistance.

Drug-resistant TB is hard to treat. One option has been for those diagnosed with pulmonary MDR TB is bed aquiline. There are other ways also to treat drug-resistant TB patients.

Insufficient sleep increases risk of stroke

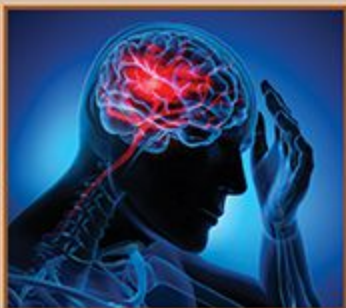
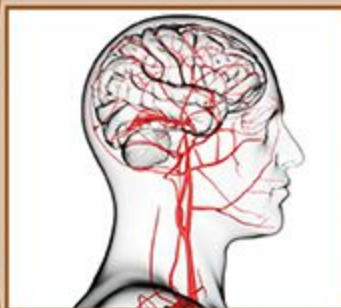
New research has found that there has been a strong link between sleep habits and the development of peripheral artery disease (PAD). This has been originally published in European Heart Journal. It has been experienced by many researchers that PAD affected over 20 crore people globally, which means, PAD is responsible for blocked arteries in the legs and increases the risk of stroke and heart attack.

The more specific outcome of the research

The study observed that individuals sleeping less than five hours per night face a 74% higher risk of developing PAD compared to those who sleep seven to eight hours. So, the study emphasized the importance of proper sleep in maintaining vascular health and preventing the possibility of PAD.

Research methodology

There were 650,000 participants in the research. It was done in two stages. First, it was asked how many hours each of the participants would sleep at night only. Then how many suffered from PAD. In the second stage, the researchers used genetic information to conduct a Mendelian randomization analysis. It helped to identify whether these associations were actually causing the increased risk of PAD. What is Mendelian randomization? It is a research method that uses genetic information to see if there is a cause-and-effect relationship between certain factors



and a particular outcome. It provides stronger evidence for potential causal links. In a separate study, it was observed that out of 53,416 adults, sleeping less than five hours a night nearly double the risk of PAD compared to sleeping seven to eight hours.

Conclusion

The new research found that insufficient night-time sleep can increase the risk of developing PAD. At the same time having PAD, in turn, can lead to inadequate sleep.



CASE PRESENTATION by Dr. Chirasri Goswami (MBBS, MD) Consultant Histopathologist

CASE PROFILE: 60-year-old male presented with a temporo-parietal mass.

DIAGNOSIS: GEMISTOCYTIC GLIOBLASTOMA (GRADE 4).

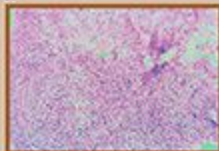
INCIDENCE: 3.21 per 1 lakh population, median age of diagnosis 64 years.

MICROSCOPIC FINDINGS: A prominent neurofibrillary background is seen with proliferating astrocytes. A large number (more than 20%) gemistocytes are seen with abundant eosinophilic cytoplasm & eccentric hyperchromatic nuclei. Geographic areas of coagulative necrosis surrounded by palisading tumour cells are seen. Microvascular proliferations are also seen.

IMMUNOHISTOCHEMISTRY: GFAP & EGFR positivity is consistent.

CYTOGENETICS: IDH mutation detection is important as nowadays only IDH Wild Type Tumours are classified as Glioblastoma multiforme & others as IDH mutant grade 4 astrocytoma.

PROGNOSIS: Quite bad, resulting in death within four to six months if untreated & 12-15 months on treatment.



CSR Activities & Events of SERUM throughout March 2023



Mar 2 & 3: Griha Puja of SERUM New Town Centre

Mar 4: Sri Sanjib Acharya at the Basanta Utsav, 2023



Mar 12: Thalassemia Awareness Camp at Ramrajatala, Howrah



Mar 16: Free Doctors Clinic by Dr. Sekhar Ghosh at Serum Auditorium



Mar 16: General Meeting of STPF at Serum Auditorium

Mar 19: Sri Sanjib Acharya at the Health Camp at Baghmari



Mar 28: Food distribution programme to the underprivileged



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