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A3i: Unique Trait in Covid-19 in India

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Why in News

Recently, scientists from the **Centre for Cellular and Molecular Biology** and the **Institute of Genomics and Integrative Biology** of the **Council of Scientific and Industrial Research** (CSIR) laboratories have identified a **coronavirus** type (A3i) that may be the second most prevalent in India and may comprise 3.5% of the genomes globally.

Key Points

- The scientists analysed 213 genomes and found that 62% of them were **A2a**, making it the **most dominant coronavirus clade in India**.
Clade: The coronavirus type or clade, is a cluster of SARS-CoV-2 viruses that share evolutionary similarities and are grouped together based on characteristic mutations or similarities in parts of their genomes. In layman terms, a clade can be understood as a **strain of the virus**.
- The **newly identified A3i or Clade I/A3i** comprised 41%, making it the **second most common coronavirus type in India**.
 - The A3i clade stood out from other clades due to **differences at four different places in its sequence**.
 - According to scientific analysis, the A3i clade **mutates slowly compared to the A2a** which is often **disadvantageous for the virus**.
 - So far, there is **no evidence of whether A3i is more virulent** (extremely severe or harmful in its effects) and linked to more deaths.
 - A3i is the **predominant strain** circulating in **Tamil Nadu, Telangana, Maharashtra and Delhi**.
- **Significance of the Classification:** Such classifications are useful in establishing whether certain strains are particularly virulent, spread more easily, how they are likely to evolve over time and whether some could be less vulnerable to certain kinds of vaccines.

- With the new clade, there are now **11 SARS-CoV-2 types identified globally** with at least **six of them identified in India**.
- Previous studies have shown that while **type O** was the **first ancestral family of the virus identified from China**, it's the A2a type, which is the most dominant in the world because of a mutation in its genes that allow that coronavirus' spike to more efficiently infiltrate the lungs.
- The **Indian Council of Medical Research** (ICMR) has so far maintained that there are **three principal variants** in India of the SARS-CoV-2 virus: those that came from **Wuhan, the USA, and Europe** via air travellers.

Council of Scientific and Industrial Research

- It was **established** by the Government of India in **September 1942** as an **autonomous body**.
- It is known for its cutting edge research and development knowledge base in diverse science and technology areas.
- It has been ranked first in the **Nature Ranking Index-2020**.
The **Nature Index** provides close to a real-time proxy of high-quality research output and collaboration at the institutional, national and regional level.

Indian Council of Medical Research

- It is the **apex body** in India for the **formulation, coordination and promotion of biomedical research**.
- Its **mandate** is to conduct, coordinate and implement medical research for the benefit of the Society; translating medical innovations into products/processes and introducing them into the public health system.
- It is **funded** by the Government of India through the **Department of Health Research, Ministry of Health and Family Welfare**.

Source: TH