



Beyond COVID-19

Preparing for future pandemic threats

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ABOUT THE LECTURE

Infectious disease expert Sumit Chanda described how he assembled a talented team of virologists at the onset of the COVID-19 pandemic to decipher how SARS-CoV-2 infection leads to disease and how our immune system defends against it. Chanda revealed that for the past two years, his dedicated group has been working closely with Calibr, the specialized drug discovery division of Scripps Research, to discover groundbreaking new medicines that could bring this pandemic to an end.

TOP TAKEAWAY POINTS

1. **Chanda and his team have been mining Calibr's ReFRAME library to find novel antiviral molecules that are effective against SARS-CoV-2.** This unique collection contains over 12,000 compounds that are already known to be safe in humans and approved for other indications. Repurposing drugs in this manner provides a rapid path to finding new potential medicines for COVID-19.
2. **Rigorous screening methods narrowed down several possible candidates that could block the replication of the SARS-CoV-2 virus.** Researchers focused on Clofazimine, a cheap, well-known therapy for leprosy and tuberculosis. Tests in preclinical models have shown that Clofazimine significantly reduces viral load in the lungs, decreases inflammatory responses and prevents damage to airways.
3. **These promising results are comparable to the effects observed with Remdesivir, the first antiviral medicine approved for COVID-19.** Importantly, the combination of Clofazimine and Remdesivir together has a more potent antiviral effect than a high dose Remdesivir on its own. Following the past successes of HIV and hepatitis C treatments, combination drug therapies provide the best path forward for handling serious SARS-CoV-2 infections. Funds are currently being raised to evaluate Clofazimine in a clinical setting for the treatment of COVID-19.
4. **Coronaviruses and other viruses like influenza are constantly reinventing themselves with new strains, meaning there is always the potential for new pandemic threats.** These viruses are difficult to eradicate because they can survive in other animal hosts, which can then be passed to humans. Due to warmer climates, wild animal habitat encroachment and trade, as well as the interconnected nature of the world, pandemics may become more common.
5. **The best pandemic mitigation strategy involves global surveillance of circulating viruses, stockpiling broad-spectrum antivirals and vaccines, educating the public and preparedness programs to minimize health and economic impacts.** As part of this effort, the newly launched [Center for Antiviral Medicines & Pandemic Preparedness](#) (CAMPP) will take the lead in developing medicines that could address future global health threats.

