# PATHOGENS OF ATYPICAL PNEUMONIA

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## AIM –

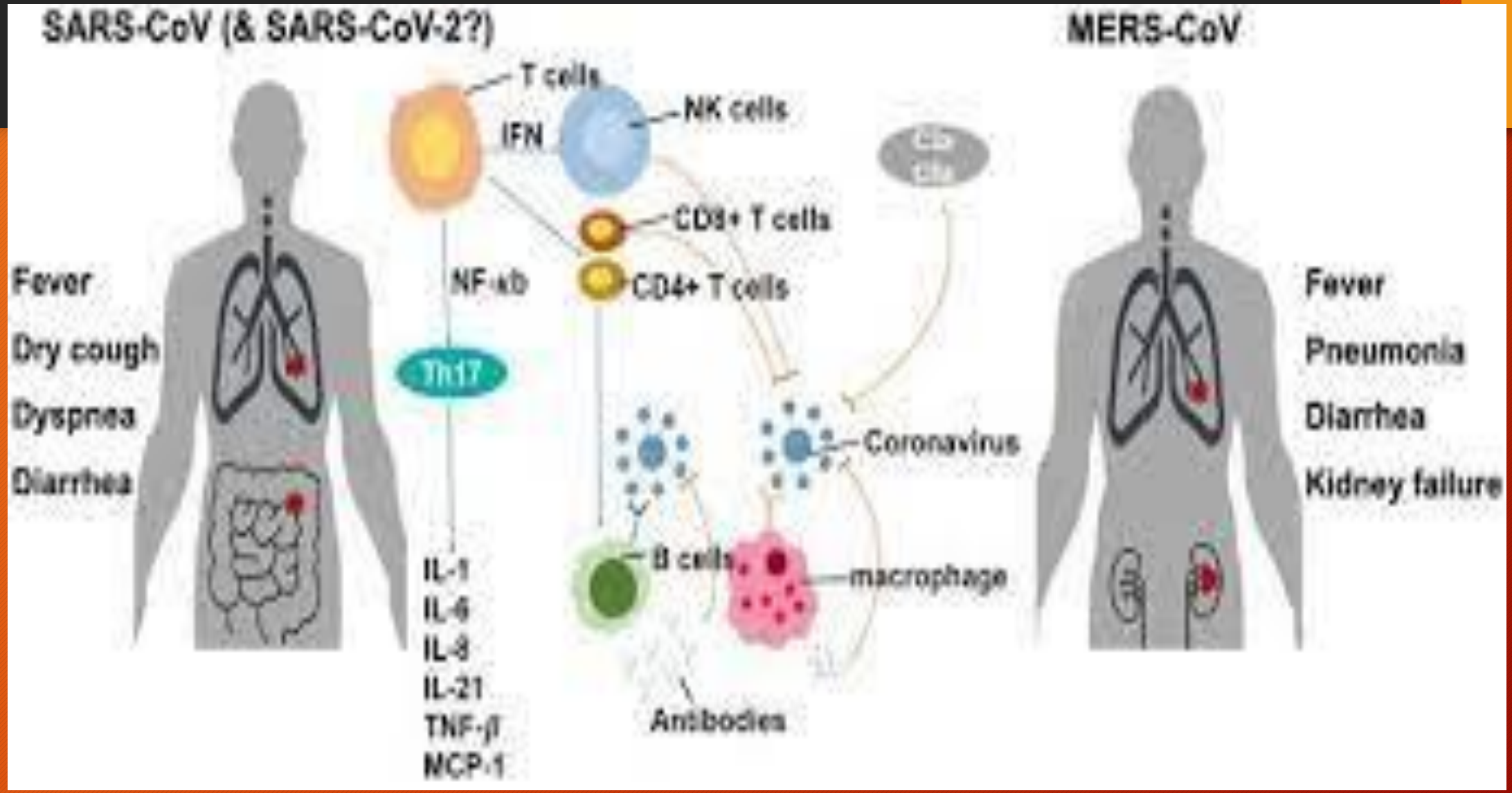
The goal is to learn about SARS-COV viruses (SARS-COV, MERS-
COV, SARS-COV-2), features of pathogenesis, causes, prevalence in India.

## Materials and methods-

Analysis of world literature data on the prevalence of SARS in the world, the taxonomy of pathogens, analysis of data from various institutions.

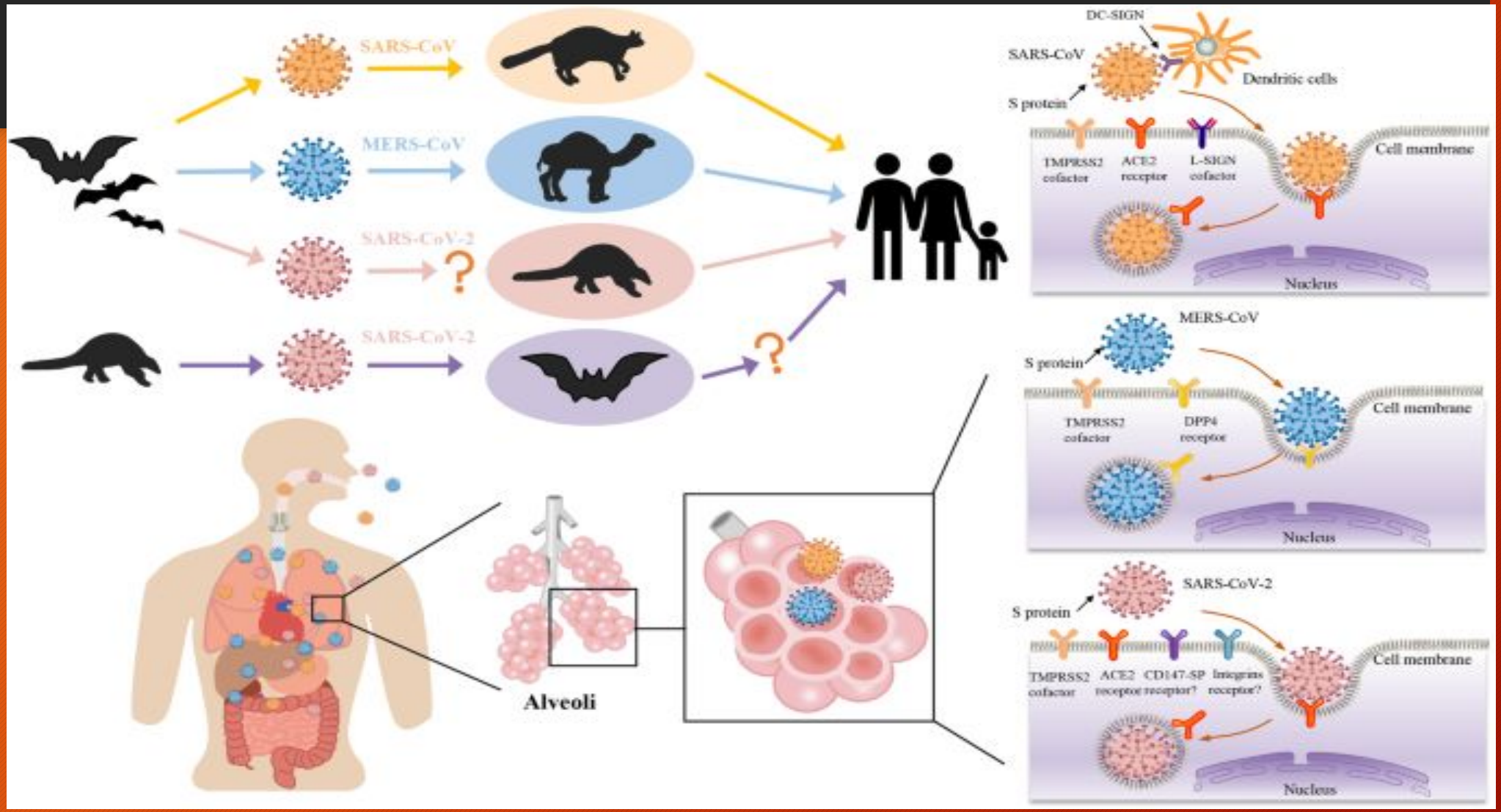
# INTRODUCTION

Infectious SARS, also known as severe acute respiratory syndrome (SARS), is an acute respiratory infectious disease caused by the SARScoronavirus (SARS-CoV). Clinically, it is characterized by fever, headache, muscle soreness, fatigue, dry cough, rarely with sputum, and diarrhea. Most patients have concomitant pneumonia. In severe cases, these conditions can develop into acute lung injury, acute respiratory distress syndrome (ARDS), or even multiple organ failure, which leads to death.

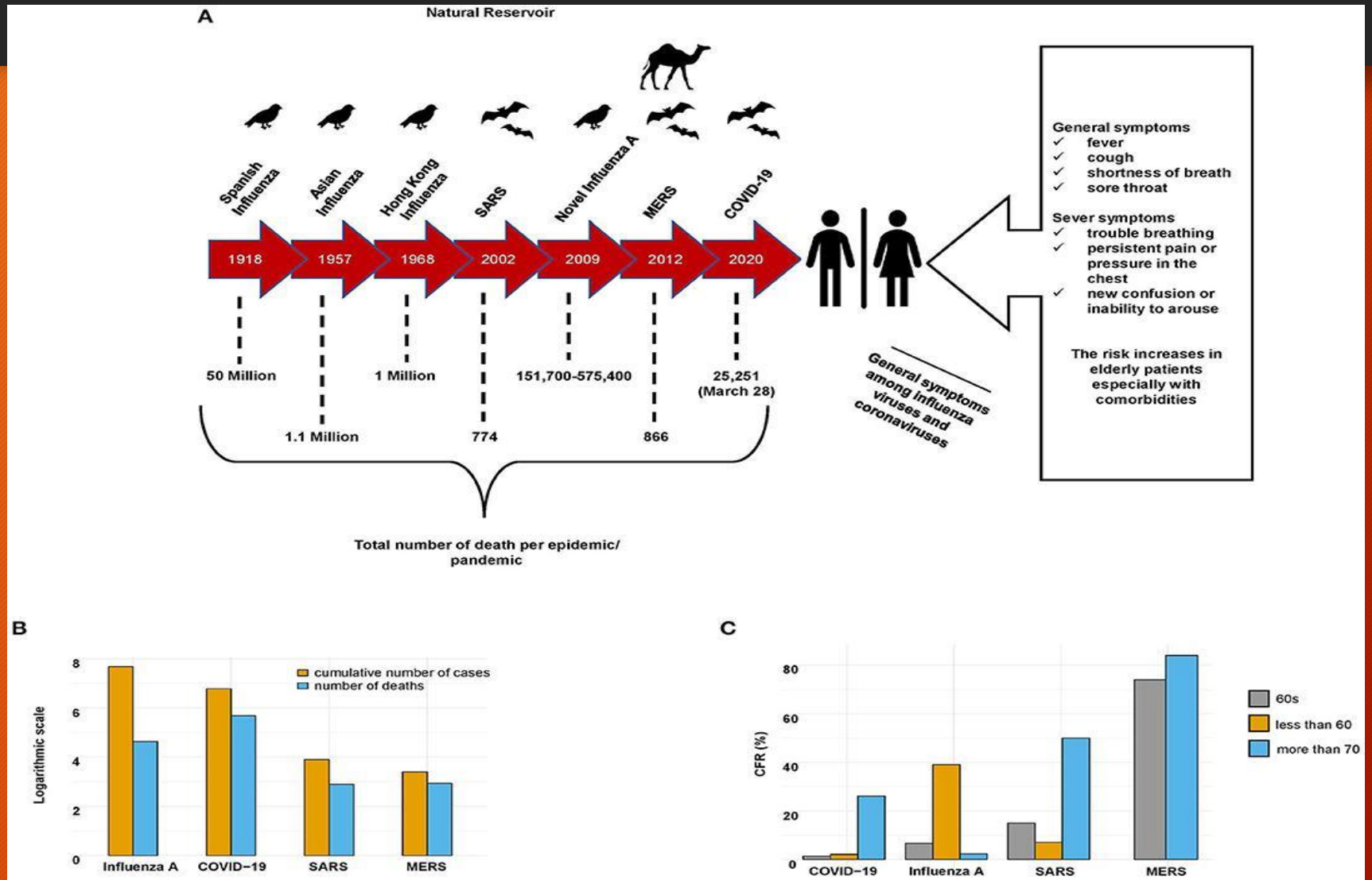

SARS-CoV (& SARS-CoV-2?)
MERS-CoV
T cells
NK cells
IFN
CD8+ T cells
CD4+ T cells
NF-κb
Th17
Fever
Dry cough
Dyspnea
Diarrhea
IL-1
IL-6
IL-8
IL-21
TNF-β
MCP-1
Coronavirus
B cells
macrophage
Antibodies
Fever
Pneumonia
Diarrhea
Kidney failure

# Prevalence in india

The current estimate of mortality from infection is 0.5-1%. Using modern models of infection mortality rates depending on age, the upper and lower limits of infection rates in Germany can be estimated in the range from 0.4 to 1.6%, which is lower than in most European countries SARS-CoV-2 is a newly emerged coronavirus. Infections in humans were first detected in late 2019 in Wuhan, China. In the following months, the virus spread rapidly around the world. SARS-CoV-2 reproduces mainly in the upper and lower respiratory tract and is highly infectious. Droplets and aerosol are the main transmission routes, and infection also occurs through asymptomatic infected individuals. Almost 90% of cases proceed without complications, in a minority of cases severe diseases and complications occur. Risk factors for the development of severe diseases are old age, hypertension, diabetes mellitus, chronic heart or lung diseases and immunodeficiency.


SARS-CoV
MERS-CoV
SARS-CoV-2
SARS-CoV-2
?
?
Alveoli
DC-SIGN
SARS-CoV
S protein
Dendritic cells
TMPRSS2 cofactor
ACE2 receptor
L-SIGN cofactor
Cell membrane
Nucleus
MERS-CoV
S protein
TMPRSS2 cofactor
DPP4 receptor
Cell membrane
Nucleus
SARS-CoV-2
S protein
TMPRSS2 cofactor
ACE2 receptor
CD147-SP receptor?
Integrins receptor?
Cell membrane
Nucleus

# Epidemiogical data



# Explaination of figure ( epidemiogical data)

- characteristics of SARS-CoV-2, SARS-CoV, MERS-CoV, and influenza A viruses. (A) Epidemics of SARS-CoV-2, SARS-CoV, MERS-CoV, and influenza A viruses. The timeline, natural reservoirs, total number of deaths, and symptoms of the patients infected with these viruses. (B) Cumulative numbers of cases and deaths caused by SARS-CoV-2, SARS-CoV, MERS-CoV, and influenza A (during the last seasonal flu 2019–2020) viruses. Influenza A virus infected the most people, while SARS-CoV-2 caused the most deaths. (C) Case-fatality rate (CFR) of patients infected with SARS-CoV-2, SARS-CoV, MERS-CoV, and influenza A (the last seasonal flu 2019–2020) viruses stratified by age.

# CONCLUSION-

*Despite the appearance of a completely new virus and the atypical nature of the disease, the medical community was able to develop timely methods for identifying the pathogen, treatment aimed at preventing or minimizing complications, as well as a vaccine against the new SARS virus.*

# ACKNOWLEDGEMENT-

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I also give thanks to the Department of microbiology **OrGMU** for engaging students of foreign faculty in these activities in order to increase the exposure of their hidden ideas to the front. This has given a native student like me a chance to bring about the latest updates about the disease in our country and measures taken up by them

# THANK YOU FOR YOUR ATTENTION