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Perspective

Insights into SARS-CoV-2: A Comparative Evaluation across Indian States

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DESCRIPTION

Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) has demonstrated a global expansion in the last several years. In an effort to address the worldwide health problem, several countries and medical organizations are still working to stop the disease's spread, but the creation of vaccinations has also helped to slow it down. India has been one of the countries with the highest SARS-CoV-2 death toll. India was discovered to be the third country worldwide with the largest number of fatality cases-157 thousand- with Maharashtra having the highest number of instances, followed by Tamil Nadu and other states. An analysis of historical data from eight Union Territories (UTs) and twenty-eight Indian states produced a thorough examination of the SARS-CoV-2's Case Fatality Rate (CFR) and transmission routes. Every geographical zone in India-the Central, Eastern, North Eastern and Northern, Southern, and Western zones-had a percent distribution of CFR computed that was 17%, 14%, 7%, 22%, 12%, and 28%, respectively. The CFR increased dramatically ($P<0.01$) in period II, which ran from April to June of 2020. Using a conventional method, we determined the CFR for each month and found that there were substantial variations in the CFR at different periods of the year ($P<0.01$).

Additionally, CFR was assessed geographically throughout India's various zones. In comparison to the other zones, we found that the western zone had the greatest CFR. SARS-CoV-2 epidemiology was assessed in individuals of different ages and co-occurring conditions. The greatest age-specific positive rate was seen in patients over 21. In patients with acute and chronic illnesses, the prevalence of SARS-CoV-2 was 12.87 and 87.13 percent, respectively. Therefore, the particular purpose of this analytical epidemiological investigation is to establish a link between SARS-CoV-2 infection and other variables that precipitate morbidity and death in the first wave of the year 2020 (Jan-Dec, 2020). The infectious illness SARS-CoV-2 is a serious danger to international health and is expected to continue until a vaccine is created that is effective or herd immunity is established. India ranked third among all countries in terms of death cases. When compared to previous periods, the CFR rate was higher generally from April to June 2020. Additionally, the total proportion of in comparison to other zones, the Western zone had a much higher death rate from SARS-CoV-2 patients.

Numerous variables contributed significantly to the transmission dynamics, and one possible explanation is the imposition of lockdowns, which caused a large-scale exodus of people from western India to other regions, so increasing the rate of spread and mortality. In addition, the western zone, which includes places like Mumbai and Ahmedabad, serves as the Indian subcontinent's main commercial hub and international entry point.

The co-morbidities that were most frequently mentioned were liver disease, diabetes, and hypertension. Understanding the death rates associated with various age groups and underlying co-morbidities is crucial in India. Therefore, this research might be applied to high-risk groups that are more susceptible to viral pathogenesis, which would be beneficial in making efficient use of the scarce resources in emerging nations. In addition, the information will be helpful for planning future tactics and pandemic readiness. This research might be linked to other variables and verified with further data. Additionally, this research may help prevent future pandemics and epidemics by efficiently limiting them *via* strategy development. This thorough study will enable researchers, physicians, and other healthcare professionals to identify gaps in care that can be filled with appropriate management and efficient use of the current system until more potent medications become available.

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