International Standard Serial Number (ISSN): 2249-6807

International Journal of Institutional Pharmacy and Life Sciences 10(6): November-December 2020

INTERNATIONAL JOURNAL OF INSTITUTIONAL PHARMACY AND LIFE SCIENCES

Pharmaceutical Sciences

Review Article……!!!

Received: 14-10-2020; Revised: 31-10-2020; Accepted: 01-11-2020

IMPACT OF COVID 19 ON ENVIRONMENT

Kancharla Kameswararao, Surneedi Satish

Department of Pharmaceutics, Adarsa College of Pharmacy, East Godavari district, Andhrapradesh-533285.

Keywords:

COVID-19 Pandemic, positive effects, Negative effects, Global Environment

For Correspondence:

Adarsa College of Pharmacy, East Godavari District, Andhrapradesh.

E-mail:

kameshkancharla@gmail.com

ABSTRACT

In 21st century The COVID- 19 pandemic is considered as the most crucial global health calamity of century and the greatest challenge faced by human kind. A new class of corona virus known as SARS-CoV-2 responsible for occurrence of this disease called as severe acute respiratory syndrome. According to WHO report on current outbreak COVID-19 has affected cases of over 6992010 and more than 403128 deaths will occur in more than 216 countries on June 9th 2020.This article focus on the positive and negative, direct and indirect effects of COVID-19 on the environment, particularly in the affected countries like India, China, and Italy. Our research shows that a significant associate between contingency measures and improvement in air quality, water quality, waste management, wildlife.

INTRODUCTION:

Corona virus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome corona virus 2 (SARS-CoV-2). It was first identified in December 2019 in Wuhan, China, and has resulted in an ongoing pandemic. The first case may be traced back to 17 November 2019. As of 9 June 2020, more than 7.11 million cases have been reported across 188 countries and territories, resulting in more than 406,000 deaths. More than 3.29 million people have recovered.

TRANSMISSION: [1]

The relationship between human health and disease is important. In china, COVID-19 in at the end of 2019 has caused emergence a large global outbreak and is a major public health issue. This virus is highly infectious and can be transmitted through droplets and close contact. The human to the human spreading of the virus occurs due to close contact with an infected person exposed to coughing, sneezing, respiratory droplets or aerosols. These aerosols can penetrate the human body (respiratory system) via inhalation through nose or mouth , shown in the figure no.1.

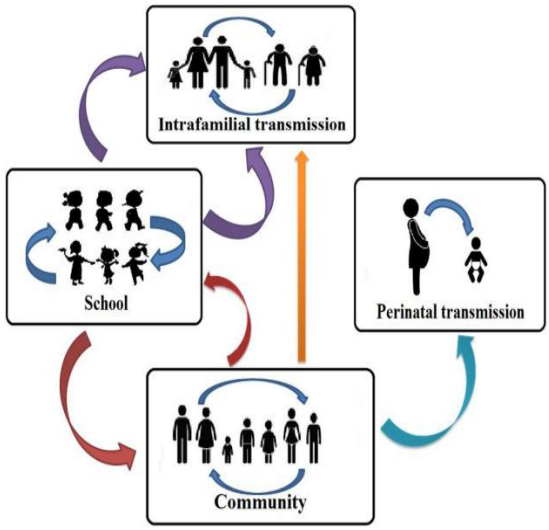

Figure No.1.Transmission of COVID- 19

Impact of COVID-19 on environment

The worldwide disruption caused by the COVID-19 pandemic has resulted in numerous impacts on the environment and the climate. A bit about World Environment Day, it was first held in 1974 and is celebrated every year on June 5 to encourage awareness and action for the protection of the environment. Before the start of the COVID-19 pandemic, the air around us had been deemed very toxic to breathe in due to the amount of greenhouse gases that had been emitted over the centuries. The Earth faced rising temperatures, which in turn led to the melting of glaciers and rising of sea levels. Environmental degradation was happening fast due to the depletion of resources such as air, water and soil. But after the corona virus lockdown commenced, there have been slight changes in the environment some of them are discussed below. COVID-19 effects shown in the Figure. No 2, 3.

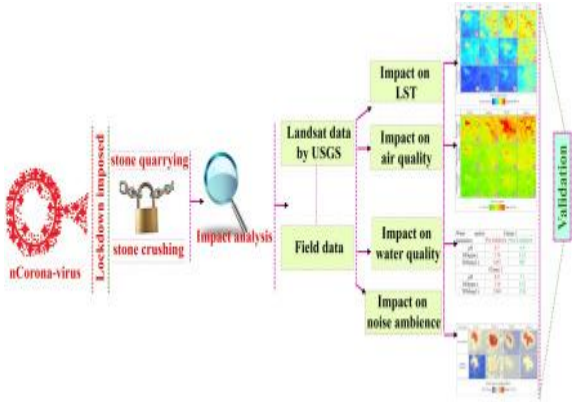

Figure No 2. Impact of COVID 19 on water quality, noise pollution, air quality

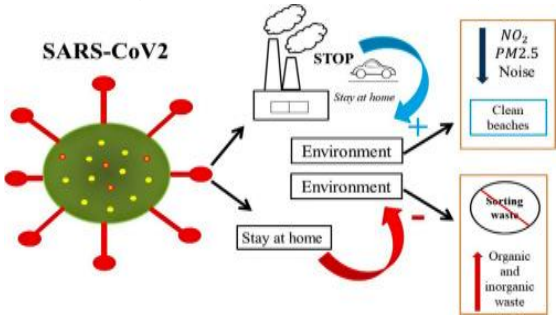

Figure No 3. Impact of COVID 19 on Environment

1. Impact on Air quality: [2, 3] After the lockdown was put in place in many countries, there was lesser travelling done by people,

whether it be by their own cars, or by trains and flights. Even industries were closed down and not allowed to function. This in turn led to the pollution in the air dropping significantly, as there was a marked decline in nitrous oxide emission.

2. Weather forecasts: The European Centre for Medium-Range Weather Forecasts (ECMWF) announced that a worldwide reduction in aircraft flights due to the pandemic could impact the accuracy of weather forecasts, citing commercial airlines' use of Aircraft Meteorological Data Relay (AMDAR) as an integral contribution to weather forecast accuracy. The ECMWF predicted that AMDAR coverage would decrease by 65% or more due to the drop in commercial flights.

3. Carbon emission: A study published in May 2020 found that the daily global carbon emissions during the lockdown measures in early April fell by 17%. They ascribe these decreases mainly to the reduction of transportation usage and industrial activities. However, it has been noted that rebounding could diminish reductions due to the more limited industrial activities.

4. Global warming: Due to the reduction of carbon emissions and green house gases the temperature on the earth gets decreased by 1.5℃ and the protective Ozone layer gets healed.

5. Fossil fuels: When the pandemic called for lockdowns, paralyzing air and ground travel, the demand for fuel was likewise decimated. An oil price war ensued with drastic shifts in global oil politics, thus destabilizing the fossil fuel sector.

6. Renewable energy sector: CNBC showed the renewable industry suffering supply chain cuts and employee layoffs during the deepening COVID-19 recession. There are worries that clean energy investments appear less desirable. Construction and development projects have been delayed as lockdown periods extend. Renewable, therefore, seek slices of the stimulus package to waylay progress derailments, which even the International Energy Agency (IEA) has cautioned about.

7. NO_2 Concentration: A joint research led by scientists from China and U.S. estimated that nitrogen oxides ($NOx=NO+NO_2$) emissions decreased by 50% during the lockdown period and the concentration gets increased after back to work.

8. Vegetation: Plants are growing better because there is cleaner air and water, and because yet again there is no human interference. With everything at a standstill, plants are allowed to thrive and grow and produce more coverage and oxygen.

9. Clean beaches: Beaches are one of the most important natural capital assets found in coastal areas. They provide services (land, sand, recreation, and tourism) that are critical to the survival of coastal communities. The lack of tourists, as a result of the social distancing measures due to the new corona virus pandemic, has caused a notable change in the appearance of many beaches in the world.

10. Noise level: [6] Environmental noise is defined as an unwanted sound that could be generated by anthropogenic activities (for instance, industrial or commercial activities), vehicles, etc.. Environmental noise is one of the main sources of discomfort for the population and the environment, causing health problems and altering the natural conditions of the ecosystems. The imposition of quarantine measures by most governments has caused people to stay at home. With this, the use of private and public transportation has decreased significantly. All these changes have caused the noise level to drop considerably in most cities in the world. Noise level is reduced from 85Dba to <65BA.

11. Increased waste: The quarantine policies, established in most countries, have led consumers to increase their demand for online shopping for home delivery. Consequently, organic waste generated by households has increased. Also, food purchased online is shipped packed, so inorganic waste has also increased. Medical waste is also on the rise.

12. Decreased waste recycling: Waste recycling has always been a major environmental problem of interest to all countries. Recycling is a common and effective way to prevent pollution, save energy, and conserve natural resources. As a result of the pandemic, countries such as the USA have stopped recycling programs in some of their cities, as authorities have been concerned about the risk of COVID-19 spreading in recycling centers. In particularly affected European countries, waste management has been restricted.

13. Water quality: Since there were no boats, whether they are fishing or pleasure ones, playing on the rivers and waterways, the water has cleared up. In areas like Venice, the water became so clear that the fish could be seen and there was better water flow. No doubt, because of the lesser human footfall even the oceans are recovering and marine life is thriving.

14. Wild life: Demand for fish and fish prices have both decreased due to the pandemic and fishing fleets around the world sit mostly idle. German scientist Rainer Froese has said the fish biomass will increase due to the sharp decline in fishing, and projected that in European waters, some fish such as herring could double their biomass. As of April 2020, signs of aquatic recovery remain mostly anecdotal.

As people stayed at home due to lockdown and travel restrictions, some animals have been spotted in cities. Sea turtles were spotted laying eggs on beaches they once avoided, due to the lowered levels of human interference and light pollution.

Conservationists expect that African countries will experience a massive surge in bush meat poaching. Matt Brown of the Nature Conservancy said that "When people don't have any other alternative for income, our prediction and we're seeing this in South Africa is that poaching will go up for high-value products like rhino horn and ivory." On the other hand, Gabon decided to ban the human consumption of bats and pangolins, to stem the spread of zoonotic diseases, as the novel corona virus is thought to have transmitted itself to humans through these animals.

15. Deforestation and Reforestation: The disruption from the pandemic provided cover for illegal deforestation operations. This was observed in Brazil, where satellite imagery showed deforestation of the Amazon rainforest surging by over 50 per cent compared to baseline levels. Unemployment caused by the COVID-19 pandemic facilitated the recruitment of labors for Pakistan's 10 Billion Tree Tsunami campaign to plant 10 billion trees the estimated global annual net loss of trees over the span of 5 years.

16. Retail and food production: Small-scale farmers have been embracing digital technologies as a way to directly sell produce, and community-supported agriculture and direct-sell delivery systems are on the rise. Beyond benefits to smaller online grocery stores which predominantly sell organic and more local food, weekly grocery deliveries can be a better choice than individual trips to a store. Online grocery shopping has grown substantially during the pandemic.

17. Litter: As a consequence of the unprecedented use of disposable face masks, a significant number of masks were discarded in

the natural environment, adding to the worldwide burden of plastic waste.

18. Research and development:

Despite a temporary decline in global carbon emissions, the International Energy Agency warned that the economic turmoil caused by the corona virus outbreak may prevent or delay companies and others from investing in green energy. However, extended quarantine periods have boosted adoption of remote work policies.

19. Particulate matter concentration and total dissolve solid concentration: During the lockdown period the particulate matter concentration reduced by three to four times, total dissolve solid concentration in river water is reduced by two times.

20. Surface temperature: Surface temperature is reduced by 3-5℃.

Preventive measures: [4, 5]

Different ways to protect the environment during the COVID-19 pandemic:

1. Elimination of usage of plastic water bottles and takes the tap water.
2. Buying of local products by reducing the carbon foot print, stop ordering products from online, consider buying from local business. It is to support our own community and local economy, reduces the green house gases.
3. Reduces consumption of meat and protect the planet.
4. Maintain rain gardens helps by absorbing excess rain and storm water and filtering contaminants before they enter into the river.
5. Un-plugging unused electronics, TV and computers.
6. Diverting rain water away from our storm and sewer system to improve home and community.
7. Cleaning the products used in home to protect our water ways soaps, shampoo, dishwash and detergents. Chemicals Potassium, Nitrogen, Ammonia harm to river and lakes.
8. Avoid idling of cars.
9. Clogging of sewer system is avoided.

Conclusion:

In 21st century the biggest and vital challenge faced by human beings are covid 19 pandemic. In last few months, all their efforts are restore the nature; humans could only move few steps towards. Covid 19 pandemic will produce both positive and negative indirect effect on environment. But later will be the greater. During this time it is the responsibility of every citizen to control the source of disease, transmission path, use of existing drugs and means to control the progress of diseases. The virus crisis brings other environmental problems they may be longer challenging to manage if countries neglect the impact of pandemic covid 19on the environment.

Acknowledgement:

Authors are thankful to management of Adarsa College of pharmacy.

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HOW TO CITE THIS ARTICLE

Kancharla Kameswararao, Surneedi Satish. Impact of Covid 19 On Environment. International Journal of Institutional Pharmacy and Life Sciences, Vol 10[6] November-December 2020 : 13-18.