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RESEARCH ARTICLE

COVID 19 AN INVISIBLE THAT SHOOK THE INVINCIBLE

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ABSTRACT

The dreaded pandemic of corona virus disease 2019 is spreading rapidly. Though the cause was identified at a lightening pace, that it's the new corona virus named SARS CoV2, our knowledge on this novel virus remains very limited. Tremendous infectivity of the virus, lack of desired antiviral, no vaccinations has made things challenging. As a result of which large human population dwells with asymptomatic corona infections. Along with medical responses, continual efforts in better understanding of the pathogenesis of this disease will aid in the optimal management of the growing pandemic.

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INTRODUCTION

COVID 19 is a novel corona virus which came with an outbreak of unusual viral pneumonia in Wuhan, China & then pandemic.¹ Corona viruses are a group of RNA viruses affecting a wide range of mammals & birds. This pandemic has affected thousands of peoples, who are either sick or are being killed due to the spread of this disease. The most common symptoms of this viral infection are fever, cold, cough, bone pain and breathing problems. It hits the respiratory areas leading to manifestations ranging from mild to lethal; finally leading to pneumonia.⁴ This belongs to Orthocoronavirinae sub family.^{2, 8} The aggressive variants include SARS, MERS & COVID 19. Genes for all the major structural proteins, in all corona viruses occur in the 5' to 3' order as S E M & N. Some of the strains of corona virus are IBV Beaudette strain, BCov ENT strain, HCoV 229E strain, MHV A59, TGEV Purdue 115, PEDV CV777 strain so far have been reported. The corona virus genome is the largest known genome among the RNA viruses.²

SARS Co-V is capable of active replication in upper respiratory tissues. Tropism of the URT tissues probably gives us a clue about continuous pharyngeal shedding of the virus, where in the symptoms are limiting to the upper respiratory tract system. In further due course, this COVID 19 resembles SARS in terms of viral replication in the lower respiratory tract areas, generating secondary viremia³. The disease typically starts worsening in the second week after the onset. The viral attack correlates to the clinical subject deterioration. In case of sinking patients, increased inflammation with unexplained hypercoagulation is a noteworthy feature. A distinctive rise in the neutrophil count with a reduction in lymphocyte count could symbolize the progression of COVID19.³

Children fare better than adults ...?

The global bio war of corona virus 2019 has affected one & all & children too to a certain extent are affected. But early closing of schools & day care centers led to less frequent exposures, which has lowered the infection rates in them. Severity of the disease is associated with the viral load which is certainly more in case of adults. Excellent innate immunity & a very good regeneration capacity of Pediatric alveolar

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epithelium, contributes to early recovery from the disease.⁴ Moreover children have less risk factor of co morbidity, obesity, smoking & so on. However proper shift of focus in understanding the pathogenesis of COVID19 in children is needed. Infants & children with preexisting illnesses could be at a risk for developing this disease.⁵

What goes wrong with the lung?

Proteinaeous & intra alveolar fibrinoid exudates, with mononuclear inflammation along with giant cells, pneumocyte hyperplasia, with diffuse alveolar damage.⁶

Cytokine storm – A game of chess

Come on! Let's stop blaming the corona virus for deaths; it's actually the hyperactive immune reaction that is the culprit. The killer is not the virus, but the body's immune response. The pandemic is in lime light due to the fact that each person's immune response is diverse and unpredictable⁶. Let's say that the inflammatory response & cell death frame the 2 components of the innate response. Macrophages recognize the pathogens & produce cytokines. These initiate the inflammatory reaction, recruit other cells of the innate immune system, instructing it to identify the pathogen & produce antibodies. Successful pathogens block the inflammatory response, by silencing the capacity of macrophages to liberate cytokines cautioning the immune system. As an offensive mechanism the infected cells undergo apoptosis. This cell death is fruitful as it has prevented the virulence of the pathogen. An overreaction takes place because, other inflammatory mediators like chemokines, neutrophils, interleukin 1b, interleukin 6, tumor necrosis factor, guide neutrophils from the capillary cells to the infected sites. These thereby increase the heartbeat, raise the body temperature, triggers blood clots, stimulates the neurons in the brain to modulate fever, weight loss & other physiological responses. When there is a haphazard uncontrolled production of these cytokines that is how the term "cytokine storm" is coined.⁶ This battle goes on & then there is organ failure.

From laundry to preparing meals.....!
Let's filter fact from fiction

We don't know the pinpointed symptoms of corona virus because they are very vague & bizarre. Anything under the sun, including the sun could be a causative for corona. We are all practicing utmost safety measures & trying to prevent from this dreaded virus, but unfortunately wide misinformation & some distorted facts about this virus can put everyone at risk & pile up to our stress levels.⁷ Simple measures are being practiced (if not, then start practicing) like social distancing, personal hygiene, avoiding touching our face, not coughing or sneezing into the hands, cleaning the homes, surroundings, high touch surfaces, cleaning clothes, doing laundry at home, preparing handling food at homes, avoiding outside food, staying indoors, & the list is on

Wash Wash & Wash....

This is the most effective & a very simple technique to stay safe. Repeated washing of hands for 20 to 30 seconds at least with simple Dettol soap water can suffice. Spraying disinfectants containing alcohol up to 70% or bleach would suffice. Did we know that cold & warm water are both equally effective at killing germs & viruses as long as we use soap & wash our hands the appropriate way⁷! Use of masks &

hand sanitization practices are in. There is so much to talk on this. This can be dealt separately. Reliable measurement of cause-specific mortality, analyses of morbid conditions and assessment of space available health resources and services are among the first principles of epidemiology and evidence-based population health policy. Thus with the continuing increase in mortality from the corona virus disease 19 (COVID-19), mortality analysis could be valuable in addressing the current pandemic¹¹.

Conclusion

This is a difficult time for all of us as the most common emotion people dread today is "Fear"¹⁰. It makes us anxious and panic in various fronts, may it be health, job security, finance or just the fear of being isolated. Everyone wants to turn the page on COVID-19 as soon as possible as it has affected our way of living and brought economic losses, as well. Surely, these lessons are inevitable and it's up to each of us to decide if those lessons are right⁹. While Covid-19 continues to spread across the world following a trajectory that is difficult to predict, the health, humanitarian and socio-economic policies adopted by countries will determine the speed and strength of the recovery. Knowing the variations in symptoms & the flooding of news and information should make us cognizant of the characteristics of the virus & compel us to abide by hygiene, social distancing, country wise social rules/norms and most importantly keep a stable mind to handle the pandemic. Fighting the virus together requires cooperation on three things: research and knowledge (working together to understand and beat the virus); maintaining global supply (trade ensuring efficient global supply of necessary materials); and warning of future outbreaks.⁹ Know your locality, state & country rules & keep information handy so as to help self & others. This virus will be around for a while so it's important to accept the fact, get to rhythm of the virtual world, think positive & react to the worst with the best state of mind. The world has survived extreme conditions before and hopefully will survive this pandemic too, after all the supreme purpose of history is a better world to live in.

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