



GLOBAL PANDEMIC 2020 WORLD ZONOTIC PUBLIC HEALTH EMERGENCY

Mantha Saraswathi Sowmya¹, Pr Y.Rajendra Prasad¹

Abstract: - It's a plethora of findings about novel corona virus and it has disproportionate effect on all age group people so it's public global health emergency, on this note we made a short overview about COVID 19.

I. INTRODUCTION

Here we discuss about most popular man made corona covid 19 virus, it's microscopic virus but it'll change human life drastically within months, it's impact is on education, daily life's, industries, transport, and commercial businesses in all sectors of nation and world, first it started as an endemic and it's epidemic finally after one trimester it became pandemic. It has its ancestors like SARS (severe acute respiratory syndrome), MERS (middle east respiratory syndrome) and finally upgraded mutated novel corona virus, these are not a particular disease they are packed combination of so many symptoms so they are called syndromes, flu like symptoms.

EPIDEMIOLOGY: novel corona virus (SARS-COV2) first incidence is found in China Wuhan province there cluster of people infected and manifestate symptoms like pneumonia. Its public health emergency (Organization, 2020b) and declared by world health organization. WHO And USCDC (communicable disease control) both are coordinated monitor health of world and it has low fatality rate but high transmissivity compare to SARA, (Assiri *et al.*, 2013; Organization, 2020a) MERS. its more vulnerable to elderly people, chronic vital organ impaired people, children and immunocompromised people.

SYMPTOMS: it's viral disease and it spread through animals zoonotic disease, but it transmitted person to person direct contact, inanimate contact, fomite, nosocomial, air droplet transmission. It shows symptoms within it's incubation period roughly 5.2 days to 14 days, and some infected persons acts as super spreaders, they are not exposed symptoms but they are carriers.

Headache, diarrhoea, increased cell amount of leukocytes, sneezing, chills, rashes, dermatological changes (red dots), rhinorrhoea, sore throat. Lung CITY Scan shows ground-glass opacities, depends on the symptoms they are mild moderate and severe. persistent fever which is greater than 101.39 degrees Fahrenheit.

PATHOGENESIS: pathogen is virus and it's coronaviridae (Weiss *et al.*, 2011) family it has crown like structure and surfacial proteins those are getting attached to human receptors and shows immune compensatory reactions like increased number of proinflammatory kinins and interleukins, (Organization, 2020a)

Significantly high blood level of chemokines and cytokines, IL1beta, IL7, IL8, IL9, IL10,

Corona virus are enveloped positive standard RNA with the largest Known RNA genome.

Superfamily nidovirus, these are classified into 3 genera, alpha, beta, gamma and the subfamily coronavirinae, within the family coronaviridae,

It can infect human as well animal there are seven types of human coronaviruses, four types (229E, NL63, OC43, KHU1), these are acute and shown mild symptoms, where as severe type is SARA, MERS, And the boss is 2019nCoV (Zeng *et al.*, 2008)

¹College of Pharmaceutical Sciences, Andhra University, Visakhapatnam

MODE OF BINDING: the viral spikes binds to lung epithelium, the first effective part is pulmonary epithelium cellular receptor mostly it's angiotensin converting enzyme (ACE2)
 transmission: by direct contact with infected people
 Sneezing , coughing droplet transmission
 Community spread, super transmitter spread , no chance horizontal transmission means mother to fetus.

II. PREVENTION AND CONTROL

Hand hygiene practices: have to wash hand 20 sec duration and it covers all hand fingers palm, nails arms with soap water , sanitize the hand with above 50% alcohol based sanitizer (ethanol, isopropyl alcohol).

Environmental sanitation: disinfect the areas exposed by infected persons bleaching powder spraying and keeping water supplies safe by using ethanol and sodium hypochlorite this virus has envelop so it doesn't survive in water other viruses rotavirus, norovirus that are enteroviruses , it disappear by oxidation with chlorine due to that reason we use bleaching chlorination water.

Cough etiquette : use a tissue and cover your nose and mouth while coughing and sneezing, if they are not available then use bent elbow, after immediate coughing please remove those in bin never ever cough in open air it infects others and the virulent sheds on surfaces it leads to contamination. If you are suspected to cough then maintain the distance 3 feet from others. If you are a frontline health care professional you've to maintain N95 Mask , which has antiviral efficiency up to 95% protection from virus particles.

Zonal Division Of Community Like Red And Green Zone

Social distance: novel corona spread by direct contact and it's airborne droplet infection so no more hand shakes (only nameste) and big no to social gatherings parties, religious prayers, get together's. for it most conscious word is social distance 1 meter.

Nose covering: it's mandatory for health care works , warriors for health and sanitation workers should cover their nose with N95 Mask.

Hand covering: covering hands with gloves because sanitation department plays crucial role in sewage management and infected people excreta gray water management. Its very difficult job ever .they are phagocytes to earth.

Personal protection PPI: why we use PPI it spread by human secretions like eye lacrimal fluid, sneeze, saliva so have to protect over all body with full length gloves, gown eye goggles, hair protective N95 nose mask , boots.

III. CONTROL

QUARANTINE OF A PERSON: the quarantine of person is the restriction of movements and segregation of persons from health volunteers, they may be not infected but there is a chance to have infection so have to monitor their symptoms till 14 days of incubation WHO recommendations for quarantine: (Organization, 2020a).

Who have face to face contact with already positive confirmed cases without 1 meter distance Providing direct protective care to patients without having PPE Staying in same room sharing workspace other inanimate things, travelling to epicenters for virus or red zones.

Self isolation:

Lifestyle changes: work out, meditation, sun exposure, drinking hot water, gargling mouth wash, less ph fruits, lemon apple .(Organization, 2020b) Screening covid 19

Polymerase chain reaction and antibody testing are the present dominant tests for covid, these two tests are search hallmarks of covid which means viral particle (RNA) residues , antibodies for that antigen, detect the genetic residual of virus. Thenovel fully automated antigen test kit is developed by **BOSCH** vivalentic, which analyses covid+ 8 other respiratory diseases. Another one is **sona** which is for domestic use like pregnancy screening.

PROPHYLAXIS: Vaccines are prophylactic measure for any disease, 20 vaccines are underwent process to survive human , they are under development, first one was US based and they were not performed preclinical trails, and the

first clinical trials by Australian scientist, University of Oxford researchers aiming to have millions of vaccines by September.

Some researchers repurposing the existed drugs like antiviral remdesivir and lopinavir, ritonavir it's Ebola antiviral drug it shown effectiveness upon so many viruses so that trials have been conducted by US, China, Scotland, England. But the results are disappointing.

And the final anecdotal drug chloroquine it killed virus but there is no evidence. years ago we do prepare vaccine by using dried virion or live attenuated one but in case of corona we are using new and less tested drug and play method. another proposal is to conduct controlled human challenge trials

PROPHYLAXIS AND DRUGS: it's not single drug therapy, it has multidrug antibacterial (azithromycin), antimalarial (Casella *et al.*, 2020) (hydroxy chloroquine, antiviral (ravadepine), vitamin C (Rothan *et al.*, 2020) and vitamins supplement.

FUTURE ASPECTS: since prehistoric times viruses are global pandemics, modulation of immune system is the finest way to tune these emergencies. In recent year advances in structural biology and other technologies works on a rationale for recombinant protein antigen, so using virtual computer aided drug design tools are needful, structure based drug design do antibody antigen development for safety efficacy develop ability of newer drugs.

CONCLUSION: the best method is to control covid TTTT trace, test, treatment, most of the countries followed this method and lockdown is another result giving method to control spread and my view is prevention is better than cure recently south Africa controlled this outbreak by following simply by dividing total country as 5 units or zones.

REFERENCES

- [1] Assiri A, McGeer A, Perl TM, Price CS, Al Rabeeah AA, Cummings DA, *et al.* (2013). Hospital outbreak of Middle East respiratory syndrome coronavirus. *New England Journal of Medicine* 369: 407-416.
- [2] Casella M, Rajnik M, Cuomo A, Dulebohn SC, & Di Napoli R (2020). Features, evaluation and treatment coronavirus (COVID-19). In *Statpearls [internet]. StatPearls Publishing.*
- [3] Organization WH (2020a). Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected: interim guidance, 13 March 2020 *World Health Organization.*
- [4] Organization WH (2020b). Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19): interim guidance, 19 March 2020 *World Health Organization.*
- [5] Rothan HA, & Byrareddy SN (2020). The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak. *Journal of autoimmunity* 102433.
- [6] Weiss SR, & Leibowitz JL (2011). Coronavirus pathogenesis. In *Advances in virus research.* Elsevier, pp 85-164.
- [7] Zeng Q, Langereis MA, van Vliet AL, Huizinga EG, & de Groot RJ (2008). Structure of coronavirus hemagglutinin-esterase offers insight into corona and influenza virus evolution. *Proceedings of the National Academy of Sciences* 105: 9065-9069.