Brief Overview of Covid 19

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Abstract: Coronavirus infection is an outbreak of a mysterious pneumonia. It was first known to all in December 2019. Covid 19 is a newly discovered coronavirus which affects people in different ways, their symptoms vary from mild to moderate, symptoms include fever, dry cough, tiredness. It could be managed or prevented by isolating themselves for 14 days and undergoing symptomatic treatment. The virus is able to invade the immune system and cause inflammatory response in the lungs, it is seen that diet and ACE (angiotensin-converting enzyme-2) to play a vital role in corona virus disease progression in people. People affected with coronavirus may have symptoms ranging from asymptomatic infection to acute respiratory distress syndrome. Information about pathophysiology of covid 19 was searched in relevant search engines like Google scholar, pubmed, research gate and the knowledge at current point of time analysed and consensus established. The pathophysiology of covid 19 is explored to arrive at a baseline data to make people aware of the current situation and the rate of spread and complications.

Keywords: COVID 19, outbreak, Pathophysiology, fever, symptoms, isolation.

INTRODUCTION
Coronavirus is an outbreak of a Mysterious pneumonia, first known to all in December 2019. It is a group of RNA viruses. The infection may cause respiratory tract infection that ranges from mild to severe. Coronavirus is a single-stranded RNA genome with nucleocapsid of helical symmetry. The pathogen of the outbreak after a time period termed as novel beta coronavirus, named 2019 novel coronavirus (2019-nCoV) brings to memory a severe acute respiratory syndrome SARS-2003 caused by another beta Coronavirus that occurred 17 years ago, corona virus have caused three epidemic diseases namely COVID-19, severe acute respiratory syndrome and middle east respiratory syndrome throughout the years (Wu, Chen and Chan, 2020; Li et al., 2020). There are many studies of Coronavirus that have not only led to good understanding of coronavirus biology but have also agreed to the fact that Corona is discovered in bats globally (Jin et al., 2020). According to the data, up to May 19, 2020, the number of confirmed cases all over the world reached 4,943,077. Of which 321,998 deaths were confirmed and 1,936,611 recovered. In addition to the currently infected patients, it has reached 2,639,308 of whom 2,639,308 patients are in mild conditions and 45,160 patients are in critical conditions, according to the latest update on May 19, 2020 by the world health organisation (WHO). Its initial stage was regarded as an epidemic but since then, has rapidly expanded to the global pandemic infecting at least 124 countries with significant morbidity and mortality (Tian, Hu, et al., 2020). Due to lack of antiviral medication specific to this virus the number of deaths occurring due to the virus is rapidly increasing day by day (Jin et al., 2020). There are numerous researches done in this field such as awareness based studies (Palati et al., 2020), (Hannah et al., 2018), (Krishnan et al., 2018), (Gunasekaran and Abilasha, 2016), (Ahad and Gheena, 2016), (Sheriff, Ahmed Hilal Sheriff and Santhanam, 2018) (Hema Shree et al., 2019), advanced studies on health disciplines (Prasanna and Gheena, 2016; Hema Shree et al., 2019), morphological variation of tooth (Abitha and Santhanam, 2019), microbiological variations and its effects (Sarbeen, Insira Sarbeen and Gheena, 2016), prevalence of hypomineralization (Ahad and Gheena, 2016; Sukumaran and Padavala, 2018), pigmentation of gingiva (Manohar and Abilasha, 2019), review studies (Hema Shree et al., 2019) etc, on many topics pertaining to the oral cavity, its anatomy and adult ology. The aim of this review is to provide a brief overview of covid 19 (Sheriff, Ahmed Hilal Sheriff and Santhanam, 2018). Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Deogade, Gupta and Ariga, 2018; Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; Jeevanandan and Govindaraju, 2018; J et al., 2018;
MATERIALS AND METHODS

All relevant search engines were searched for the literature pertaining to COVID-19, the structure of COVID-19, its pathogenic mechanism and testing for COVID-19. The knowledge and awareness at the current point of time is assessed and consensus is established. The data was collected and quality analysis of the collected data was done using Health Evidence’s Quality Assessment Tool ([No title], no date) and the data was displayed in a tabular column. (Table 1) The knowledge in the current point of time analysed and thus the consensus was established.

Table 1: Quality Analysis of Articles

<table>
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<tr>
<th>Author</th>
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**Structure**

Coronavirus is from coronaviridae family, what is called a beta Coronavirus or COVID-19. COVID-19 is a positive stranded RNA virus that has a crown like structure in electron microscopes. The virus has a spike glycoprotein on the anvil of the virus maybe around eight or elliptical in shape and measures about diameter 60 to 140 nm (Jin et al., 2020). It is classified under the category of zoonotic virus, (Adhikari et al., 2020; Li et al., 2020). Some genera of the human have alpha and beta. (Li et al., 2020). The virus has four main proteins responsible for its virulence namely the M (membrane), S(spike protein), N(nucleocapsid) and the E (envelope protein). (Mousavizadeh and Ghasemi, 2020). M is the most abundant of these. The spike protein is a type I membrane glycoprotein which has peptomers. These are the main inducers of neutralising antibodies.

**Incubation Period**

The incubation period ranges usually from 1 to 14 days. The average incubation period is maybe 5 days. About 3 to 7 days and up to the longest time was 12.5 days. Above 60 years early development of symptoms occurs faster when compared to others. The virus affects the epithelial cells of the alveoli. The cilia and the lower respiratory tract are affected which facilitates the attachment of the virus to its receptors. (Chu et al., 2020). The viral load increases initially and can still be detected about 12 after onset of symptoms and signs.

**Risk Factors**

Coronavirus is a disease affecting mainly old age people. People with pre-existing diseases like tumour, cirrhosis, hypertension, see any diabetes, CVA etc are more prone to covid 19. (Jin et al., 2020) Immune compromised status like chronic lymphocytic leukaemia and renal transplantation. (Tian, Xiong, et al., 2020)

**Types**

There are different strains of coronavirus identified, they are SARS-COV-2, (Mousavizadeh and Ghasemi, 2020) and MERS-CoV(Wu, Chen and Chan, 2020) (Adhikari et al., 2020). About 85% of the SARS-COV is identified with animals. SARS increases the possibility of animal human transmission. (Sahay and Farber, 2020). Coronavirus disease COVID-19 is caused by SARS-COV-2. It is now the disease that is of great global public health concern causing a pandemic. (Rothen and Byrareddy, 2020). The virus belongs to the sub family Orthocoronavirinae of the Coronaviridae family. They are classified into four genera of CoVs- alpha coronavirus(alpha CoV), beta Coronavirus(beta CoV), delta coronavirus(delta CoV), Gama coronavirus(gamma CoV); (Cascella et al., 2020). The beta Coronavirus is subdivided into various types. (Wu, Chen and Chan, 2020)

**Transmission**

Coronas virus disease or covid 19 rapidly spreading virus which is a pandemic now worldwide. The virus may cause symptoms ranging from mild respiratory symptoms to severe pneumonia. The fatality rate caused to this virus is being estimated to around 2%. The natural reservoir is thought to be bat while palm civet or raccoon dogs maybe the intermediate host of SARS and demanding the camel for MERS. (Prevention et al., 2020) The virus may be found in the nasal discharge, maybe sometimes even in the blood or feces. The virus name is plants by three times droplet infection contract infection and aerosol infection. (Chu et al., 2020). The virus enters the upper respiratory tract through the nostrils and reaches the lower respiratory tract. It enters inside the cells and directly happens between the plasma of the cells and the virus. The viral genome is released into the cytoplasm and it is translated into structural proteins and polyproteins.

**Symptoms**

The respiratory symptoms are cough, shortness of breath, throat, rhinorrhea, hemoptyis. Which blood in sputum, chest pain. In terms of gastrointestinal or diarrhoea, nausea and vomiting. In order of musculoskeletal and muscle aches and neurological views like headache, confusion. (Wu, Chen and Chan, 2020) (Li et al., 2020) The patient is initially present with shortness of breath which may cause problems with acute respiratory distress syndrome which may worsen over a period of time to multiple organ failures. It has been seen that some patients affected also present with this distributive shock or cardiogenic shock. (13).

**Diagnosis**

Nasopharyngeal swab, sputum, lower or upper respiratory tract swab He is diagnosed PCR- RT Chest x-ray shows bilateral pneumonia like appearance. It is patchy which infiltrates bilaterally with focal hyperplasia. The X-ray shows ground glass appearance. (Tian, Hu, et al., 2020). Nucleic acid detection, CT scan, Ellisa blood culture (Tian, Xiong, et al., 2020). Histology. Shows diffuse alveolar damage with hyaline membrane formation Anything vascular congestion initially. Sometimes there is prescence of inflammation cells. Pneumocyte cell injury might be present with the formation of syncytial giant cells and focal sloughing. The cardiac bio marker may be elevated.
Complications
The virus affects the upper respiratory tract initially which later spreads to the lower respiratory tract causing shortness of breath which may lead to acute respiratory distress syndrome (Adhikari et al., 2020) (Xu et al., 2020). The virus may invade the bloodstream and damage any organ eventually it may lead to multi organ failure and the heart is another vital organ which may get affected because of this virus causing heart failure, and arrhythmia (Jin et al., 2020)

Precautions
Using 60% alcohol content hand sanitiser, N 95 face mask can be used. Using tissues for sneezing and maintaining social distancing can be more accurate for prevention of COVID-19. Personal protection equipment includes gloves, foot and eye protection, full body suits, goggles. Repeated hand washing with soap. Sneezing with tissues.

Our institution is passionate about high quality evidence based research and has excelled in various fields (Pc, Marimuthu and Devadoss, 2018; Ramesh et al., 2018; Vijayashree Priyadharsini, Smiline Girija and Paramasivam, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai et al., 2019; Sridharan et al., 2019; Vijayashree Priyadharsini, 2019; Chandrasekar et al., 2020; Mathew et al., 2020; R et al., 2020; Samuel, 2021)

CONCLUSION
This review is a brief compilation of facts about Covid-19 infection, and its multifarious effects. It touches upon the structure of the virus, its transmission, risk factors, diagnosis, symptoms, complications and general precautions. With the exponential increase in worldwide literature on the infection, updates are aplenty and helps in knowledge gathering on Covid-19 infection.

REFERENCE


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