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EXPLORATION AND IMPEDIMENT OF CORONA OUTBREAK- A REVIEW

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ABSTRACT:
Virus is a sub microscopic infectious agent which replicates only within the organism's living cells. Virus can infect people of all types. Virus is a tiny parasite that cannot replicate by itself. Most viruses are genetically modified with RNA or DNA. In that now the pandemic is spread among the world with the name of corona and scientist has investigate that upcoming level of SARS and MERS is the corona, but it is a tough task to cure this COVID-19 in this modern world. The origin place of COVID-19 is china (Wuhan) and it destroyed many people in that area. Many Chinese herbal drugs are used to control the corona and some Indian herbal and ayurvedha medicines are also used in India. Scientists submitted many sequences in gene bank and the drug discovery process is going on and by coming to the source of corona is from the animals and mammals and it spreads to human. Some methods are used to diagnostic this virus and there are four types of corona virus in that now the COVID-19 is the beta corona virus is spread among all over the world. Some diagnostic tools and theraphatic drugs are under process condition. The traditional Chinese medicine has the cured rate of 83.7% and it works effectively than other medicines. In this paper we studied about the sources, methods, diagnostic tools, and some herbal medicines also.
KEYWORDS: Infectious, Sequences, diagnostic,replicate

INTRODUCTION:

Corona is a most deadly pandemic outbreak in this modern world. Corona has the novel name of COVID19 and it has been officially labeled as a pandemic by the World health organization. International committee on Taxonomy of viruses (ICTV) termed it the SARS.COV-2 Virus. COVID-19 is caused by SARS-COV-2, and it is about in the length of 60-140 nm and it is similar to severe acute respiratory syndrome (SARS)-cov (approximately 80% similar). Scientists are investigated that the corona virus is origin from animal source such as bats and ant-eaters. **(Drosten et al., 2003)** Firstly this COVID-19 origin from the china Wuhan sea food market, first people is a female who has affected by this COVID-19 the affected people was tested by the sample of bronchoalveolar fluid, and the confirmation is done by the rapid kit and also through the PCR technique. **(Chan et al., 2020)** The disease outbreak linked to 2019-ncov again highlights the hidden virus reservoir in wild animals and their potential to occasionally spill over into human populations. The human to human transmission seen during the SARS- cov outbreak is due to SARS-cov2's ability to adapt its s protein to easily bind to human ACE2 and penetrate the epithelium of the airways. **(USA center of disease control 2020)** cov infections mainly involve the upper respiratory tract and gastrointestinal tract, ranging from mild, self-limiting disease such as common cold to more severe manifestations such as bronchitis and renal involving pneumonia. 10% to 30% affect the upper respiratory system. The number of SARS cases increased substantially in china in the next year and then spread globally, 14 infecting at least 8096 people and causing 774 deaths. 12 SARS-cov's international spread in 2003 was due to its high transmission potential under specific circumstances and inadequate preparedness and implementation of infection control practices**. (zhong et al., 2003)** coronaviridae family viruses have a single- strand, positive- sense RNA genome ranging from 26 to 32 kilo bases in length. **(Wong et al., 2016)** Corona viruses have been found in several avian hosts **(Cavanagh et al., 2007)** as well as in various mammals, including camels, bats, masked palm civets, mice, dogs and cats. **(Ismail et al., 2003)** In November 2002 a further beta- corona virus was first detected in southern china (province of guangdong). Until the end of the march, the WHO received an update from the Chinese government, with 792 cases and 31 murders reported. The Chinese health ministry's lack of accountability has been cited as one of the main contributors to the global spread of the virus in a all nook and corner of the world. **(Smith et al., 2006)** corona viruses can cause numerous animal system infections and mostly human respiratory tract infections, such as severe acute respiratory syndrome (SARS) and respiratory syndrome of the Middle East (MERS). Most of the patients have mild symptoms and strong prognoses. **(yin et al.,2018)** so far, a few patients *with 2019ncov have developed and died from extreme pneumonia, pulmonary oedema, ARDS or multiple organ failure.

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Medical insurance in china covers all the expenses of 2019ncov care. **(Zaki et al.,2012)** corona RNA viruses which are widely distributed among humans, other mammals and birds and which cause respiratory, energetic, hepatic and neurological diseases. Six species of corona virus are known to cause illness in humans. **(Weiss et al., 2011)** Four viruses- 229E, OC43, NL63, and HKU1- are prevalent and typically cause common cold symptoms in immunocompetent individuals. **(Masters et al., 2013)** The two other strains- the serve acute respiratory corona virus syndrome (SARS- cov) and the corona virus respiratory syndrome of the middle east (MERS- cov)- are zoonotic in nature and have sometimes been related to fatal disease. **(Cui et al., 2019)** corona viruses are large, enveloped, positive strand RNA viruses that can be divided into 4 genera: alpha, beta, delta, and gamma, which are known to infect humans with alpha and beta COVs. **(Song et al., 2019)** Chinese also used some herbal classic medicines and in that the main part is YPF powder which is a classic Chinese herbal remedy commonly used to treat illness in the respiratory tract. This study found that YPF powder had anti- colitis activity in TNBS- included colitis mice, and this finding was consistent with previous findings showing that YPF powder could shorten the duration of the disease and decrease the rate of diarrheal recurrence, and the underlying mechanism could have correlation. **(Jun et al., 2005)** Naturally the YPF powder has the anti inflammatory and immune regulatory agent and promoting the proliferation of spleen cells and balancing the ratio of helper (Th) 1/Th2 cells in the allergic airway disease model in mice. **(Wang et al., 2020)** While the bioactive components responsible for those immune- regulatory effects of YPF powder have not been identified, the pharmacological effect has been spotting. **(Shen et al., 2014)** The main drug targets for this COVID19 are spike protein, RNA dependent RNA polymerase and main protease by inhibiting these targets COVID19 can be reduced and controlled. 2019-ncov shares many features with SARS- cov, such as epidemiology, clinical characteristics, and the entry receptor ACE2 actually there are 16 non structural proteins (NSP1 through NSP16) and it has the open reading frame(ORF) 1 ab- replicase complex and the corona contains 4 proteins namely spike protein, envelope protein, membrane protein, and nucleocapsid and mainly the two third part of the RNA genome is covered by the ORF 1 a/b, which produces the two viral replicase proteins that are polyproteins (PP1a and PP1ab) frame shift between OFR1 a and OFR1 b guides the production of both PP1ab polypeptides that are processed by virally encoded chymotrypsin-like protease (3 CL ^{pro}) or main protease (M ^{pro}) The spike protein in SARS- cov-2 binds to angiotensin converting enzyme 2 (ACE 2) repector. **(Xiong et al., 2018)** The virus genome with the nucleocapsid is released into the cytoplasm of the host cells. ORF 1a and ORF 1b genes, which produces two PPs that are the PP1a and PP1b- translation process and the formation of the replication transcription complex is occurred. In this study the source, spreading, methods, diagnostics are studied and discussed. **(Park et al., 2014)**

SOURCES:

SARS and MERS are the two viruses which brings the world in trouble in 2018 and now the next level of this named as COVID-19 in 2019 and it is now pandemic in our world. This virus is spread from the animals to humans and also from mammals. **(Malave et al., 2020)** Mainly bats are the source of this COVID-19 some of the animals became the sources and they are bats, mice etc., and firstly it is found in the sea food market and so it may be the origin from the sea foods also. **(Sheahan et al., 2017)**

METHODS:

Many of the scientists investigated the next generation sequencing of samples which are taken from the bronchoalveolar lavage fluid and from that the culture are isolated from nine patients and in that eight of them are the persons visited the sea food market. **(Nasser et al., 2018)** Complete as well as partial human genome sequences were taken from the individuals. Viral contigs were connected by the Sanger sequencing method.

DETECTION METHODS:

- Clinical specimens and RNA extraction.
- Real time RT- PCR

1. RNA- dependent RNA polymerase gene detection
2. E gene detection

- Phylogenetic tree analysis
- Next generation sequencing of viral full- length genome
- Sequencing analysis
- Transmission electron microscopy

Currently the diagnosis of COVID-19 is based on gene detection via RT- PCR in real time. In addition to virus detection, the production of serological tests and rapid diagnostic tests would be required with the isolation of

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the causative agent. **Wang et al., (2011)** Sequences are also deposited in gen bank according to this COVID-19 and the first imported MERS- coV strain was named china GD01 and was 30,114 nucleotide, deposited at gen bank under the **accession number KT006149**.(2015) the sequence of beta coV/ Nepal/61/2020/ from coordinates 1 to 29811 is identical to the sequence of isolate 2019-n coV WHU01 **(genbank accession number MN988668)**.(2019) SARS- related coVs in Kenyan bats adds to the diversity and geographic range of coVs in Rhinolophus bats, named BtKY72, available in genbank under the **accession number KY352407**. (2020)

TRADITIONAL CHINESE MEDICINE:

Chinese people use both the convectional and traditional medicine in that only the conventional medicine is treated for the affected persons and the survival rate is 52.6% and in some studies they treated the people with both the conventional medicine and also the traditional Chinese medicine and for that the survival rate is 78.4% in the other hand some affected peoples are treated only with the traditional Chinese medicine and the survival rate for that is 83.7% and in this traditional Chinese medicine the significant role is played by the Glycyrrhizin it is extracted from the Liquorice root and mostly the Chinese people use this root in their daily food habits**.(national health commission 2020)** It is mainly reported in the Lancet report research and it published. Naturally some plants have the potential inhibitor of cov 3CL protease, RNA- dependent RNA polymerase and these are the plants Rhubarb extracts, Litchi seeds, Houttuynia cordata, and Isatis indiqotica. And some plants inhibits the SARS- coV RdRp but it is a toxic so all the patients are treated with small amount of dosage and these are the plants Sinomenium acutum, and Coriolus versicolor. Some plants inhibit SARS- coV replication and it is non- toxic and these are the plants Panax ginseng, and Lonicera japonica. **(Liszewski et al., 2009)** And the spike protein ACE 2 interation by these plants is Galla chinensis, veronicallina rifolia and Toona sinensis. Conventional medicines are also used and this is a animal source medicines and mainly this Tan re quine is a medicine which is taken from the Asiatic black and brown bears, ursodeoxycholic acid or ursodiol and it dissolves the gallstones and it is mainly used to treat liver diseases. **(Grandi et al., 2015)** Its can be called as bear bile. China's national health commission has approved this medicine on march 4 but it is not accepted by the FDA because it is illegal process. **(Tramontano et al., 2011)**

INDIAN TRADITIONAL MEDICINE:

Naturally Indian food contains many medicinal values. Natural products have antiviral activity in nano molar concentration. Lycorine is a alkaloid which is came from the family of Amaryllidaceae. **(Han et al., 2007)** Tulsi is being used in the management of pain, diarrhea, cough and fever which are the common symptoms of COVID-19 and it is investigated by Sailesh kumar. Some Indian scientists has done a research to alternative bear bile and these are some of the plant extracts, Berberis asiatica,(3 CLP and also inhibits the RNA dependent RNA polymerase) Adhatoda vasica,(inhibits the attachment of viral protein and replication) Andrographis paniculata,(inhibits the spike protein and RNA dependent RNA polymerase) the following are the plants which is used to treat the SARS, MERS in 2002 and now it is similarly used to treat the corona affected patients also, Polygonum multiflorum, Bidens pilosa, Sophora flavescens, and Rheum officinale baill. **(panda et al., 2005)** Concanavalin is a type of beans and it is also called as jack beans in India and it has the compound named canavalia ensiformis it also inhibits the viral attachment of the protein and also replication. It is mostly found in hilly areas**. (Nishiura et al., 2020)** Next to this cinnamomi is also inhibits the ACE 2 receptor and attachment of spike protein and it has the compounds of procyanidin A2 and procyanidin B1 and the cinamtannin B1 which is isolated from cinamomi cortex inhibited SARS, COV, infection**.(sharma et al., 2019)** This cinamomi inhibits the helicase activity. Papine like protease are inhibited by the Psoralea corylifolia and if the papine is inhibited then the non structural proteins and we can easily control the replication of the COVID-19 In kerla Ayush secretory (Rajesh) kotecha, Guluchyadi kashayam. **(Walunj et al., 2014)** Like that in Tamilnadu they provide the Kaba sura kudineer for preventing the COVID-19

PREVENTION

Social distancing is the main thing for the prevention and people should follow the seven steps of hand washing technique which is insisted by the world health organization and the personal hygiene is also plays a vital role in this and all must intake the foods which boots up the immune power. **(Nishiura et al., 2020).** By that only people can be dismissed in affected category of COVID-19. It can be identified in their lungs as "wet, heat, congestion," according to clinical manifestations of patients infected with COVID-19. **(Toots et al., 2020)** We assume that the lungs are fragile in traditional Chinese medicine. So the disease first affects the function of the lungs**. (Guangzhou Daily et al., 2020)** "Wet" refers to the sticky and heavy turbidity factor which can cause a long course of illness and harm the body's work. "Hot" refers to the hot, dry, and rising turbidity factor which can cause

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illness. **(Zhu et al., 2019)** "Congestion" is a causative factor capable of congesting blood supply and causing symptoms including pain. **(Kashyapa samhita et al., 2004)** Traditional Chinese medicine claims Qi is the fundamental material that forms the human body and retains fundamental functions. **(Swerdlow et al., 2020)** We divide Qi into pathogenic Qi and stable Qi. The safe Qi refers to substances that keep our body functioning normally. **(sharma et al., 2019)** The pathogenic Qi refers to substances which could affect our body's health. Therefore, the purpose of prevention treatment of TCM is to protect lungs. **(Rastogi et al., 2015)** Yupingfeng san, a kind of preventative patent medicine, is chosen because of the nature of the lungs' diseases, are also listed by the researchers. **(Saxena et al., 1987)** Yupingfeng san is an ancient TCM herbal medicine used to protect Qi's lung and to avoid pathogenic Qi. There are three herbs in this medicine: Astragalus, Fangfeng and Atractylodes. **(Kumari et al., 2012)** Astragalus can enhance Qi in the lung and may minimize phlegm. Fangfeng can ease the pathogenic Qi, eliminate huminity and alleviate pain. **(Sachan et al., 2019)** Atractylodes enhance spleen Qi which can influence our digestion and absorption. **(Mamidi et al., 2017)** Previous studies have shown that Yupingfeng san is capable of controlling immune function in the body. **(Susruta samhita et al., 1916)** These medicinal herbs should be combined and boiled for around 15 minutes after boiling along with 1000 ml of pure water to get about 600 ml tincture. Growing tincture can be subdivided into three doses, and taken once, three times a day, 200 ml orally.

CONCLUSION

In this study we infer that for COVID-19 scientists are keep on researching in drugs and the genome sequencing also. In future they will find out the right curing method and this disease get completely cured by maintain the social distancing and the hygiene I our society. The herbal drugs are used in huge quantity to cure the COVID-19 nowadays. Mainly the spices and the Indian traditional foods has natural curing effect. So they can be suggested by the researchers and Ayush department. FDA also searches for many drugs and alternative for animal source drug. Through all this we can get rid of COVID-19 in future.

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