



Corona Virus (COVID-19) Relation with SARS, MARS Virus and the Radiological X-rays Images for Diagnosed CoVID-19 Patients.

¹Umeed Ali, ²Dr.Akhtar Hussain Pull, ^{3,*}Faisal Rehman, ⁴Nasir Ali, ⁵Dr.Rashid Rasool

¹Shah Abdul Latif University Pakistan, ² Khairpur Medical Collage Khairpur,

^{3,4*}Sukkur IBA University, ⁵ D.G Khan Medical Collage Punjab.

Abstract:

This research worked is proposed for the Corona Virus COVID-19, the Core Area of this research is to study of Radiological results of the patient CoVID-19 in Pakistan and China, the CoVID-19 is Spreading very fast from person to person, this virus is a silent like a cold Bio-War and it were started from the Wuhan City of China. This virus has affected cases are 1,857,115 and deaths people are 144,332. we have research out that the previous virus is more dangers for the human that cause to death, but the CoVID-19 is not as much as danger for the death, it spread very fast from person to person, So we have study about X-rays image results show that COID-19 effect the human lunges and this virus attack on the lunges and human respiratory system, where it distress the respiratory system and its goes to down where patient can lost their life. From the x-rays images we have found that after the COVID-19 attacked on human its lunges system is completely damages and lunges are filed of water instead of the air. Human lunges properly not work to take the breath from nature they need to take the ventilator for the breathing.

Key Words: Coronavirus, Pandemic, X-ray Images, Virus Evolution, Lunges.

Introduction

The Coronaviruses are a large family of viruses which may cause illness in animals or humans. In humans, several coronaviruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The most recently discovered coronavirus causes coronavirus disease COVID-19. Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness. [4], These all virus are only attack on the lunges and damage the lunges and other body parts like throats and create the dryness and other breathing issues.

The best way to prevent and slow down transmission is be well informed about the COVID-19 virus, the disease it causes and how it spreads. Protect yourself and others from infection by washing your hands or using an alcohol based rub frequently and not touching your face. The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's important that you also practice respiratory etiquette. At this time, there are no specific vaccines or treatments for COVID-19.

Coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was first reported from China in December, 2019. Although Middle East respiratory syndrome coronavirus (MERS-CoV)² and severe acute respiratory syndrome coronavirus (SARS-CoV)³ infections have a higher mortality rate than does COVID-19, SARS-CoV-2 spreads much more rapidly than MERS-CoV and SARS-CoV. The peak viral load of patients with MERS-CoV and SARS-CoV infections occurs at around 7–10 days after symptom onset, which could be associated with nosocomial outbreaks involving healthcare workers.^{2, 4} Clinical studies of antiviral agents for SARS showed that the viral load decreased significantly with treatment success.[5,6,7,8].

Medical Images Scan technique for the Diagnosed:

The Radiological Rays:

The X-rays are the wave of electromagnetic radiation, these rays has high energy; these rays easily passed from the high density materials mostly used medical images for the diagnosed the patient. These rays like a visible light, mostly x-rays we used to generate the medical based image of the body, bones and tissues, X-rays are passed from one side and create the image in shadow from the body. We can say that the study of x-rays is called the radiological signals.

X-rays Working Operation:

These rays are used as per the designed application but most of them is used for the cancer treatments, where these images can produced by others methods but the major is x-rays photography we can say that the radiology , for the Scan the images patient must be located the x-rays source to the detector where its image create the clearly. These rays are crossed from the object and create the shadow of that object and that will be the copy of the scan x-rays copy. The high-energy rays of used to scan the human lungs and check the movement of the air.

X-rays Medical Applications:

In every image of medical is captured and scan is the part of the x-rays technology so here are few important used and application of x-rays for the diagnosed the patients.

The Radiology : Detects bone or stone fractures, cancer and tumors and other abnormal masses, pneumonia, some types of injuries, calcifications, foreign objects, dental problems, and much more related to the other medicals issues.

The Mammography: This rays graph is used to detect the breast or chest cancer area and treatments, as well as used this technology to detect tumor and its shapes and size. We can used to detect the small and micro level cells, micro calcification are the calcium salt that's present in the body and tissues but this used to identify the tumor and other cancer types.

CT-SCAN: The computed tomography is also known as the x-rays images but here used the very small like narrow beam of x-rays, in this procedure scan objects body is rotate around the machine and machine will generated the computerized image or like a slices of the scan body that is known as the CT scan.

Fluoroscopy: The main use of the fluoro-screen is diagnosed the real time images of cancer patients by using the x-rays based technology. Also this feather of the technology is used for the breathing movement of the heart, blood circulation movement and used to diagoized to open the clogged vessels of the blood to heart system to send and received the blood from the other parts of body.

Cancer Treatments used Therapy: Radiation therapy for the cancer treatments the high-energy radiations and x-rays are beneficent to diagnosed and terminate the cancers cells which are caused to damage the DNA. We can say that theses radiation is the dose for the cancer and tumor patients. These high energy and x-rays comes from the radioactive elements which are used in side of the therapy machine and that is injected to the human blood to destroy the tumor cells.

These electromagnetics rays are the power full Rays that can damage the all kind of human organs, mostly we used these x-rays for the Bone Cancer, Blocked blood vessels and other inside body infection to diagoized them. While the pregnancy condition don't used to x-ray or ultrasound the children because these rays are the high energy and powerfully that can damage the new baby body other sensitive body parts.

Comparison with Deferent Virus and Analysis: The COVID-19 virus and other virus are closed relation to each other. As shown in Table from the Table 1, we have analysis that SARS, MARS and Corona are generated from the wilds or sea animals and effected to the both animals and human health, the transformation of the virus depend open the Environments , temperature and human to human contacts. These Virus SARS, MARS and COVID effects on human repository system and create the issue of breathing and damage the lungs, having Fever with high temperature, Breathing issue and Dry Cough. The other virus except from the Corona is more dangers for human as virus as mentioned in table 1 the death ratio and other stages. The Corona Virus has low rate of death but it has high rate of Spreading from human to human, all virus has its antibiotic and complete vaccine but Corona has no any particular any vaccine. In this stage only solution to use the social distance, Avoid the travelling, used the alcoholic soaps for the wash the hands, avoid to hand shake. These are the precaution of the COVID-19 virus to save.

Table 1: Comparison and Analysis of the Corona-19, SARS and MARS Virus

Virus details	COVID-19	MARS	SARS
Started Year & City	December, 2019 Wuhan, China	First Reported in Saudi Arabia	Reported in Asia in 2002 Spread 2003
Effected Country	185	27	26
Health Issue	Fever, Cough, Headache, Nose rain and Breathing issues.	Fever, Nose Rain, Dry Cough, headache Breathing Issues.	Distress the respiratory system.
Death Rate	160,835	858	813
Cause	Bats, Seafood	Camel	Fowl
Fatality	1.4% to 4.7%	35%	10%
Spreading	Human to Human With Contacts.	Human to Human with Contact	Human to human and with a Closed Contact.
Precautions	Alcohol & Other germ kill chemicals. Social Distance. And Closed Contact	Distance from camel and don't used Malik and meets. Used Antibiotic's.	No Drug Including Antibiotics and distances.

Corona Virus Fact and Figures:

The COVID-19 are the largest family of the virus, such kind of virus are mostly found in animals, and then this kind of virus are transferred to the human after that transfer rate increase from one infected person to other person .all details and analysis are mentioned in the table 1.the big challenge are to protect yourself from the virus is very difficult task but not impossible. First is to don't close contact to the animals or effected person and fellow the good food and healthy food for Strong the immune system. This virus is not transferred until unless the closed contact of the Human or animals.

- 1) This virus is spread with the help of animals and then after it will transferred animals to human then human to human, with the closed contact each other's.
- 2) One of the causes COVID-19 is started from the seafood or cats but not sure which is correct statements.
- 3) This Virus does not travel in Air; sometime depend upon the Environments conditions.
- 4) If virus will affected on surface of any object so then clean it with any Alcoholic material or liquid.
- 5) Wash your hand and other uncovered area of body with Sanitizer or other Soaps.
- 6) Avoid touching the Mouth, Nose, Eyes and face area.
- 7) Virus can be transferred from droplets of effected persons.so used the 1 or more than 1 meter distance from the effected person.

Precautions for CoNVID-19:

For this disease yet there is no any particularly and antibiotic or Vaccine to prevent by humans so there are some precaution for the Virus to protect themselves that to use the social distance for couple of days, Wash hands on regularly based after every 2 hours with the sanitizer and alcohols, Isolated yourself, don't eat the animals meets, don't smoke and avoid the travelling Public placing and gatherings.

Results:

The chest infection are the more valuable to identify the CoVID-19, the radiology of any patients that show the disease and infection of chest through the test of chest, the x-rays images are taken from the University of Medical Khairpur Hospital Khairpur, While the patients are tested for the Corona virus positive tests, these radiology images are taken to identify the pneumonia test that's show that this virus effected the human lungs, Where Pneumonia is also one kind of the COVID-19 Virus, so these radiology based x-rays images are show the condition of the patients. Tested results of the x-rays image of the KMC hospital patient results show the pattern of the consolidation and it's clear that normally region of the lungs are filed with the liquid instead of the air.as shown in figure 1 Figure 2 and Figure 3. That shows lungs are filled with the water instead of the air and filed water show that these part of lungs are damage, may be or may not recover these expired area of images.

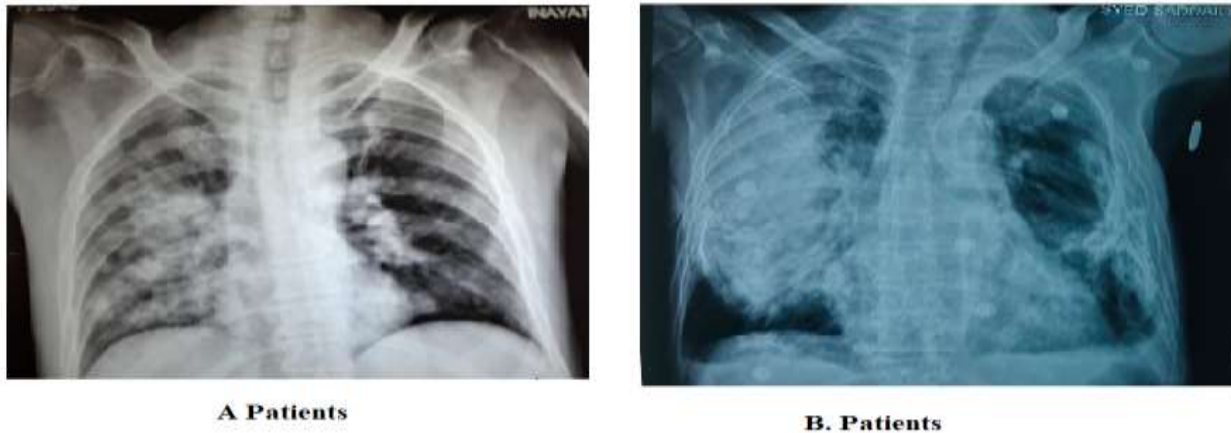


Figure 1, Tested Radiology Images of the A and B Patients at KMC.

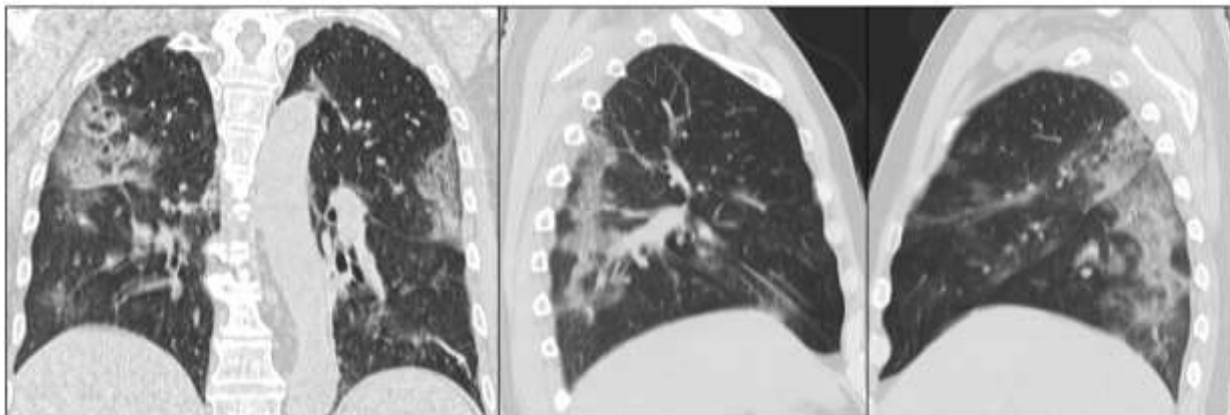


Figure 2. Tested from KMC, Patients Patterns of Consolidation.

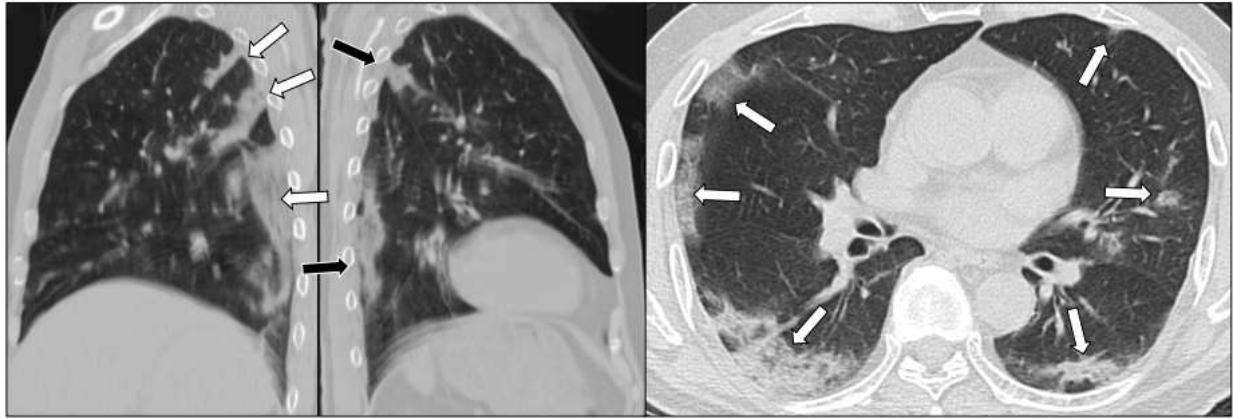


Figure 3, Tasted Patients Patterns and Subpleural Distribution

Conclusion

In this research work is main focus on the two thing first is virus issue and birth based analysis and other the X-rays based images, that show the virus attached and its destroy the respiratory system of the human , we have analysis from the patients tested effected human lungs are covered with the liquid instead of the Air , and most of the area is damages of lungs and the from the analysis table we found that SARS, MARS and COVID19 are belong to the same family but it created from the animals, SARS, MARS are more dangers as compare to CoVID19, CoVID19 is more spreading and effect the more people, so we have to Avoid the Social Distance and used the Alcohol Based Product used to wash hands regularly based.

References

- [1]. World Reported conform cases, <https://www.worldometers.info/coronavirus/>
- [2]. Chu CM, Cheng VC, Hung IF, et al. Role of lopinavir/ritonavir in the treatment of SARS: initial virological and clinical findings. *Thorax* 2004; **59**: 252–56.
- [3]. To KK-W, Tsang OT-Y, Yip CC-Y, et al. Consistent detection of 2019 novel coronavirus in saliva. *Clin Infect Dis* 2020; published online Feb 12. DOI:10.1093/cid/ciaa149.
- [4]. Zhou P, Yang X-L, Wang X-G, et al. A pneumonia outbreak associated with a new coronavirus of probable bat origin. *Nature* 2020; published online Feb 3.
- [5]. Zou L, Ruan F, Huang M, et al. SARS-CoV-2 viral load in upper respiratory specimens of infected patients. *N Engl J Med* 2020; published online Feb, 10.1056/NEJMc2001737.
- [6]. <https://www.niaid.nih.gov/diseases-conditions/covid-19>
- [7]. https://www.who.int/health-topics/coronavirus#tab=tab_1
- [8]. <https://www.nibib.nih.gov/science-education/science-topics/x-rays>
- [9]. <https://www.nibib.nih.gov/science-education/science-topics/computed-tomography-ct>.
- [10]. <http://www.WHO.com/Reserarch/Material>.