A Survey on Causes and Identification of People Infected with COVID 19 and their Treatment

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ABSTRACT
A study was conducted to assess the causes and treatment of patients infected with Covid19. In order to carry out a survey of Covid-19, first of all, google form was made and distributed among common citizens of urban as well as rural areas by means of various social media applications such as Whatsapp, Telegram, and Mail and so on. More than 150 individuals took part in this survey in two months of period. We included various categories in this form namely- name of patient, age, occupation, covid symptoms, diagnosis, recovery days, treatment profile, precautions, vaccination status and its side effects. From this survey we came to know that more number of men infected from covid-19 than females and generally aged people have more chances of infection as compared to other age group of individuals. Many people are aware from various symptoms and precautionary measures of covid disease. However, during that time, many people were not aware about vaccine; hence, half of participants did not got their vaccine. This survey is very helpful to understand and spread awareness about severity of Covid disease.

KEYWORDS
INTRODUCTION

The name "corona virus" is derived from Latin corona, meaning "crown" or "wreath. The name was coined by June Almeida and David Tyrrell who first observed and studied human corona viruses. The word was first used in print in 1968 by an informal group of virologists in the journal Nature to designate the new family of viruses.

Many human corona viruses have their origin in bats. The human corona virus NL63 shared a common ancestor with a bat corona virus (ARCoV.2) between 1190 and 1449 CE. The human corona virus 229E shared a common ancestor with a bat corona virus (GhanaGrp1 BtCoV) between 1686 and 1800 CE. More recently, alpaca corona virus and human corona virus 229E diverged sometime before 1960. MERS-CoV emerged in humans from bats through the intermediate host of camels. Corona virus disease is an infectious disease caused by newly discovered SARS-COV-2 virus.

Classification of corona virus:

There are two types of corona virus.

MERS-COV (Middle East Respiratory Syndrome Corona Virus) SARS-COV (Severe Acute Respiratory Syndrome Corona Virus)

Clinical features:

- INCUBATION PERIOD : 2-27 days
  - According to the CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC), the incubation period for the novel corona virus is somewhere between 2 to 14 days after exposure.
  - More than 97 percent of people who contract SARS-COV-2 show symptoms within 11.5 days of exposure.
- RECOVERY TIME : 3-6 wee

AIM

To carry out identification of people who have infected by Covid-19 disease as well other information regarding them.

OBJECTIVES

Following are the objectives of Covid-19 survey,
a. Symptoms of covid-19
b. Diagnosis of covid-19
c. Treatment of covid-19

MATERIALS

The data of Covid-19 patients is collected by using google form.

METHODS

In order to carry out survey of Covid-19, patients as well as other details of them; first of all, google form was made. This form was forwarded through social media apps like Whatsapp, Telegram and E-mail. Adult and aged people who are belonging to urban areas and villages took part in this survey. Students, teachers, doctors, lab technicians, house wives, businessmen, farmers, employers, employees and so on submitted their responses and took part in this survey in a period of 2 months.

In this survey individuals gave information like their name, age, occupation, symptoms of corona disease, diagnosis result, mode of treatment, post treatment care and their vaccination status.

SYMPTOMS:

- Normal Symptoms :
  - Fever
  - Fatigue
  - Dry cough

- Other symptoms are less common:
  - Loss of taste or smell
  - Nasal congestion
  - Conjunctivitis [red eyes]
  - Sore throat
  - Headache
  - Muscle or joint pain different types of skin rash,
  - Nausea or vomiting,
  - Diarrhea
- Chills or dizziness
- Symptoms of severe COVID-19:
  - Shortness of breath
  - Loss of appetite
  - Confusion
  - Chest pain
- Other less common symptoms:
  - Irritability
  - Confusion
  - Reduced consciousness
  - Anxiety
  - Depression
  - Sleep disorders
  - Strokes
  - Brain inflammation
  - Delirium
  - Nerve damage

1] Our immune system fights with the coronavirus present in our body. Therefore, to kill the virus, the immune system increases body temperature. That’s why fever is a symptom in COVID-19.

2] O₂-CO₂ exchange occurs at the alveoli. Alveoli are tiny air sacs in our lungs that take up oxygen and expel carbon dioxide.

- This coronavirus uses the alveoli’s cells as a host cell.
- When the virus replicates and breaks the cell membrane to come out, it damages the cell.
- Because of this damage, the immune system acts at the damaged location and tries to heal it. Thus, pus spreads at the damaged site in the alveoli.
- Because of this pus, oxygen (O₂) insertion is not possible in the required range.
- Therefore, difficulty in breathing, chest pain, and similar symptoms appear in COVID-19.

3] Some amount of ACE 2 receptor may be present in our brain, so the virus can also affect the brain.
- Virus binds with it and hijack the pain sending neurons called nociceptors to produce headache, body ache, joint pain, conductivities, loss of taste and smell.

**DIAGNOSIS:**

**Specimen collection:**
1. Combined nasopharyngeal or pharyngeal swab.
2. If test positive repeat every 3 days till negative.
3. If test negative repeat second test after 24 hrs.
4. If 2 consecutive negative isolation can be discontinued.
5. Lower respiratory specimen is preferred when applicable.

**Diagnosis tests:**
1. **Travel history:**
   - China
   - USA
   - Italy
   - Iran
2. **CBC (CRITICAL BLOOD COUNT):**
   - Leucopenia (30 to 45%)
   - Lymphocytopenia (85%)
3. **Chest x-ray:** (SENSITIVITY 60%)
   - Because of initial abnormalities suggesting covid-19 pneumonia on a chest radiograph is loss of the normal black appearance in the lung.
   - In abnormal chest X-ray, consolidation opacities were the most common finding seen in the patients (82%).
4. **RT-PCR:** (SENSITIVITY 60%)
   - When COVID-19 began, reverse-transcriptase PCR (RT-PCR) test was the first to be developed and widely deployed and remain the primary tool used for diagnosis.
   - The RT-PCR test can be performed by using nasopharyngeal swabs to obtain nasopharyngeal specimens or by obtaining other upper respiratory tract specimens by using a throat or saliva swab
   - In this test, virus allow replicating itself so, it take 4-5 hrs to show its results.
5. **Chest ct scan**: (SENSITIVITY 95%)

- Chest CT has a potential role in the diagnosis, detection of complications, and prognostication of coronavirus disease 2019 (COVID-19).
- Implementation of appropriate precautionary safety measures, chest CT protocol optimization, and a standardized reporting system based on the pulmonary findings in this disease will enhance the clinical utility of chest CT.
- However, chest CT examinations may lead to both false-negative and false-positive results.
- Chest CT is valuable to detect both alternative diagnoses and complications of COVID-19, while its role for prognostication requires further investigation.
- Chest CT scanning in patients with COVID-19 associated pneumonia usually shows ground-glass pacification, possibly with consolidation.
- Some studies have reported that abnormalities on chest CT scans are usually bilateral, involve the lower lobes, and have a peripheral distribution.

6. **IgM / IgG Combo test for covid**:

- The COVID-19 IgM/IgG Rapid Test is a qualitative lateral flow immunoassay for the simultaneous detection of IgM and IgG antibodies to SARS-CoV-2 in whole blood, serum or plasma specimens.
- The test cassette contains recombinant SARS-CoV-2 antigen conjugated to colored particles. When a specimen is added to the sample well of the cassette, any IgM and IgG present in the specimen will bind to the antigen conjugate, forming colored coronavirus antigen-antibody complexes.
- This mixture migrates laterally along the membrane to the test region.
  - The COVID-19 rapid test kit is IgG / IgM combo test kit.
  - Now a day most used and diagnostic kit is this.
  - This kit has a limitation, in acute condition this diagnostic kit does not show proper result.
  - In this test 2 or more line is seen than test is positive.
  - If only one line or no line appears then test is negative.
**TREATMENT:**

1) **Self care:**

   a) If any signs appear contact your healthcare provider.
   b) Stay home or away from others for 14 days.
   c) Keep at least 1 meter distance from others, even from your family members.
   d) Clean your hands frequently.
   e) Wear mask.
   f) Stay in a separate room from other family members.
   g) Keep the room well ventilated.
   h) Contact your healthcare provider if you have any danger symptoms, like
   i) Loss of speech or mobility
   ii) Confusion
   iii) Chest pain
   iv) Difficulty in breathing
   v) ETC...
   i) Keep in touch with your loved one by phone or online and give proper information of your condition.

2) **Medicinal treatment:**

   a) **Mild cases** :-
      Supportive treatments,
      i) Antihistamine
      ii) Analgesics

   b) **Moderate cases** :-
      i) OSELTAMIVIR [150 mg, BID, FOR 5 DAYS]
      ii) HCQ & CQ [500mg, BID, 14 DAYS] OR RIBAVIRIN [5 DAYS]

   c) **Severe cases** :-
i) LOPINAVIR / RITONAVIR [5 DAYS]

ii) HCQ & CQ [500mg, BID, 14 DAYS] OR RIBAVIRIN [5 DAYS]

iii) OSELTAMIVIR [150mg, BID, FOR 5 DAYS]

d) **Critical cases** :-

i) HCQ & CQ [500mg, BID, FOR 14 DAYS] OR RIBAVIRIN [5 DAYS]

ii) OSELTAMIVIR [150mg, BID, FOR 5 DAYS]

e) **Investigational therapies** :-

i) FAVILAVIR [FAVIPIRAVIR]

ii) REMDESIVIR

iii) TELCOPLANIN

f) **For fever** :- [BID, 14 DAYS]

i) TAB. DOLO 650

ii) PARACIP 500

g) **For cold** :- [BID, 14 DAYS]

i) TAB. CETRAZINE

ii) TAB. LEVOCETRAZINE

h) **Immune booster** :- [BID, 30 DAYS]

i) TAB. LIMCEE

ii) TAB. SHALCAL

iii) MULTIVITAMIN TABLETS

i) **Antibiotics** :- [BID, 5-7 DAYS]

i) TAB. DOXYCYCLINE

ii) TAB. AMOXICILLIN

iii) TAB. CLARITHROMYCIN

iv) TAB. CIPROFLOXACIN

v) TAB. MOXIFLOXACIN

vi) TAB. AZITHROMYCIN

**RESULTS** In this survey, responses of individuals were recorded through google form and represented in the form of pie charts and line graphs. Therefore, it was convenient to distinguish and conduct studies of various responses.
Various categories of Covid-19 google form survey are as follow:

- Name
- Age
- Gender
- Symptoms
- Co morbidities
- Diagnosis
- Mode of treatment
- Recovery days
- Post COVID treatment
- Precaution
- Vaccination status
- Symptoms appears after vaccination

From above criteria following details are opted from a Covid-19 survey.

**Age:**

Through google form survey, we found that responders having age of below 15 and above 55 may have higher chances of COVID-19 infection. Furthermore, aged citizens have more possibilities of infection because according to a survey, half of old people found positive of Covid-19.

Most common reason of this situation is low ability of immune system and other conditions of people. Generally, aged individuals have suffered from other health relate issues; hence, their body is unable to give strong response to covid virus.

**Gender:**

![Graph 1: Gender ratio](image)

According to responses, 59.2% male and 40.8% female responders have fill the details.
Male have more chances to get infected with the corona virus because they go outside in order to work. Females have fewer chances to get infected because most of females have usually worked at home.

- **Symptoms:**

![Graph 2: Various Covid-19 symptoms](image)

According to a survey, 84% of responders have experienced fever in COVID because when human immune system fights with virus or any antigens it increases body temperature for protecting other systems. In addition, one third responders have breathing problem. Approximately 43% of responders has experience of body ache and throat infection. Nearly 31% responders have lung infection because of COVID. Furthermore, almost identical number of people has issues of loss of smell and taste and fatigue.

It is interesting to note that, only six individuals among 157 had rashes on skin as a covid-19 symptom. Likewise, cold and fever are the main symptoms as it appears in majority of responders.

In a survey, negligible proportion of people did not mention any covid symptoms. Last but not the least, only few responders have one symptom whereas, rest of others have suffering from more than two types of symptoms.
Comorbidities:

Graph 3: Other comorbidities

In this survey form, we included types of common comorbidities which are usually seen in covid patients.

Majority responders have other disease (comorbidities) like,

- Blood pressure,
- Diabetes,
- Asthma
- Tuberculosis

However, roughly 50% responders had not infected any other diseases. While, none responders had bowel disease. Therefore, it can be said that it is not inter connected with covid-19.

In this most of comorbidities are related with the lung, because corona virus probably affects the lung cells.

Diagnosis:
Graph 4: Types of diagnosis

From survey we came to know that almost 80 to 85% of responders found Covid positive according to a survey and 13-15% people found negative.

There are various types of facilities are available for recognising covid like RT-PCR, Rapid antigen, x-ray, HRCT, Ig-G / Ig-M Combo test, CBC and so on.

Among various tests, Rapid antigen provide quick result, hence many responders use this test. In addition, nearly third quarter people prefer RT-PCR test as it is most accurate and easily understandable test as compared to other types of diagnosis. Minority number of individuals did HRCT test. This test is use for knowing the infection level in lungs and if patients have severe damage in lungs’ cell than they are immediately transfer to hospitals for proper treatment where doctors provide proper guidance and treatments to patients. Patients with normal conditions are allowed to stay at home.

Moreover, CBC and Ig-G / Ig-M are the least preferable tests as per survey.

- Mode of treatment:
Graph 5: Mode of treatment

There are two modes of treatments.

1. Hospitalization
2. Home quarantine

(1) Hospitalization:
In this type of treatment, individuals who have found covid positive after tests are directly sent to nearby hospital for advance treatment. In hospitals, doctors and medical provide treatments according to severity of patients. As per survey, nearly 38% people got treatments in hospitals

(2) Home quarantine:
In this mode of treatment, covid patients isolate themselves in their house for at least 14 days. The government personnel on and often check conditions of patients by visiting their home. 42% responders chose home quarantine treatment.

○ Recovery days:

Graph 6: Number of recovery days

Recovery days are also called as number of days which are require for completion of treatments and being healthy again. According to the severity of disease this days are decided.

As per the government protocols, it is mandatory to have 14 days isolation period if persons find covid positive.

According to a survey, nearly one third patients took 9 to 14 days for recovery. However, sometimes patients go for more than fourteen days treatment because of severity of disease and 7% responders took more than 14 days.
Furthermore, it is interesting to note that almost identical proportion of responders took 1-3 and 7-9 days for recovery which was 24.8% and 21% respectively. One tenth people took one week time to regain healthy conditions again. The least numbers of individuals had 3 to 5 days recovery time.

**Precautions:**

Graph 7: Various Precautions

After completion of the treatment the doctors provide detail information for self care. Various precautionary advices are like wear mask, avoid public gathering, frequently sanitize hands, Drink warm water, and maintain social distancing, Maintain healthy diet, self quarantine and so on.

As per survey, more than one hundred responders give priority to wear mask, often drink warm drink water, avoid gathering and maintain social distance and self quarantine as precautionary measures.

In addition, 90 people among 157 responders chose healthy diet option as a preventive step from covid-19 disease. All participants of a survey selected more than one precaution step.

**Vaccination status:**
Graph 8: Vaccination status

Vaccination is the best way to protect ourselves from covid disease. Therefore, it is essential to take vaccine as early possible to prevent spread ability of covid in the world.

We carried our survey study from mid February to March end during this time there was less awareness and availability of vaccines in India. Hence, fewer responders had taken vaccines. In India, during first phase of covid vaccines, the government give first priority to front line workers like doctors, medical advisors, other medical support staff because they have played very crucial role in the treatment of covid patients.

After that, the authority has planned to provide step by step vaccines to common public. According to a survey, only 42% responders took vaccines and rest of other were waited for their chance.

- **Side effects of vaccination:**

![Bar chart showing side effects of vaccination](Image)
Graph 9: Side effects of vaccines

After taking vaccines antigen of corona virus is entered in the host body. So, immune system is able to fight with the antigen and make antibodies. But due to presence of antigen in body common side effects are seen after vaccination like,

- Rashes at the site of injection
- Fever
- Nausea
- Headache
- Breathlessness
- Etc...

According to a survey, fever and headache are the most common side effects of vaccines among responders because 56 and 32 people respectively had these effects.

CONCLUSION

To sum up, it can be eventually commented that common citizens are willing to take part in COVID-19 survey. We are overwhelming by awareness of covid-19 among Indian citizens. In a short duration of two months time, more than 150 people gave their responses and among them many are students, professional health care worker, farmers, businessmen, house women and so on.

From this survey we came to know that more number of men are infected from covid-19 than females and generally aged people have more chances of infection as compared to other age group of individuals. Many people are aware from various symptoms and precautionary measures of covid disease.

Responders have prefer varieties of tests like Rapid antigen test, RT-PCR test, HRCT, CBC, D-dimer and many others for diagnosis of covid-19. Majority of people chose home quarantine whereas critical patients admitted in hospitals for proper treatment. During survey, less than half of people received vaccines and it is expected to rise in the nearby future.

We are able to spread severity and awareness of covid-19 in citizens through this survey.

REFERENCES


