

An Update On Covid-19 Care and Vaccination Status

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Abstract:-

COVID-19 is one of the most deadliest disease causing virus which not only affected on health, but also on the overall economical progress of the globe. It creates havoc in the society because of its unstoppable transferable ability. It was started in China spread all over the world and most of the part of the known world is under in lockdown status for almost eight months and still counting which has a long lasting effect on health, economy, development, etc. The human resources are still struggling to find out an exact cure and vaccine. This review is aimed at the methods of precaution and safe practices at home, office, work places, while travelling and updated methods of treatment. It also gives an idea about the importance of social distancing, quarantine and its majors, importance of the use of masks and methods of disposal. A special emphasize is given on overall time period obligatory for vaccine production, and an exact development of corona vaccine as on today. A generalized idea about a suspected person to differentiate from non-suspected, probable contaminated person. This review clarifies the symptoms, precautions, treatments, and vaccine under development for COVID-19 causing disease.

Key words: - Covid 19, Corona, Safe practices, Quarantine, Vaccine,

Introduction:-

COVID -19 (CORONA VIRUS INFECTIVE DISEASE 2019)

It is a disease called Corona virus Disease-2019 caused by a Corona virus named as SARS-CoV-2 Covid-19 is a transferable disease which is transferred through droplets generated when an infected person coughs, sneezes, or exhales. These droplets are too heavy to hang in the air, and quickly fall on floors or surfaces.

An individual can be infected by breathing in the virus if you are within close proximity of someone who has Covid-19, or by touching a contaminated surface and then individual eyes, nose or mouth.

The symptoms of COVID-19 are

1. Fever
2. Cough
3. Difficulty in breathing

Covid-19 testing is not required if there are no symptoms like Fever, Cough or Difficulty in breathing. If you have these symptoms of Fever, Cough or Difficulty in Breathing it is advisable to get the advice of physician.

The Covid-19 virus can be transmitted in all areas, including areas with hot and humid weather. The best way to protect yourself against Covid-19 is by frequently washing your hands with soap and water, covering your coughs and sneezes and avoiding crowded places.

The virus lives inside the body where the temperature is maintained at 37°C and is not affected by a hot water bath that we use to take.

Garlic is a healthy food that has other benefits but does not protect you against the Corona virus.

Spraying with alcohol or sanitizer on clothes and body, or consuming alcohol will not prevent you from getting infected. Infection spreads when the virus enters the body through nose or mouth. Cleaning and wiping hands with alcohol is to prevent the germ from entering your system through infected hands when you touch your mouth or you eat food with infected hands.

THE SAFE PRACTICES TO BE PROMOTED

1. Frequent hand washing
 - a) Regularly and thoroughly clean your hands with a 70% alcohol- based hand rub or wash them with soap and water for 40 sec
2. Maintain social distancing
 - a) Maintain at least 1 meter distance between yourself and others.
 - b) Avoid going to crowded places
 - c) Avoid organizing and attending events, prayers, parties
3. Avoid touching eyes, nose and mouth a. Because contaminated hands can transfer the virus to your eyes, nose or mouth
4. Practice good respiratory hygiene
 - a) Cover your mouth and nose with a handkerchief or tissue when you cough or sneeze.
 - b) Dispose of the used tissue pepper immediately in a closed dustbin.
 - c) Wash your hands with soap and water for 40 sec or rub hands with 70% alcohol based hand sanitizer

THE SAFE PRACTICES AT HOME

1. Stay away from others-
 - a. Stay in a specific room and away from other people in your home.
 - b. Maintain distance of at least 1 meter.
 - c. Restrict all movement so that others in the house stay safe from infection.
 - d. If available, use a separate bathroom.

2. Seek health care and notify- If suffering from fever, cough, or having difficulty in breathing, wear a mask to protect others and immediately get in touch with your nearest health facility or ASHA or ANM
3. Wear a mask- a. When you are around other people and before you enter a healthcare provider's clinic b. If the sick person is unable to wear it, then other family members should wear it when they enter the sick person's room
4. Avoid going to public areas a. Do not go to work, school, or public areas b. If you are infected, you could transmit infection to others
5. Avoid visitors

HOME QUARANTINE

Support: Assigned family member to take care of bed ridden patient helping them follow doctor's instructions for medication(s) and care. **Monitor Symptoms:** Fever and breathing must be monitored regularly and reported immediately in case there is breathing difficulty or very high fever.

Protective Hygiene: • Avoid sharing household items like dishes, drinking glasses, cups, eating utensils, towels, bedding with the patient. Throw used tissues in a lined closed trash can.

- Wash and disinfect linen in warm water and soap, dry in sun
- Washing machine: use disinfectant, soap, warm water, dry in sun
- Linen can be soaked in hot water and soap in a large drum, using a stick to stir, avoiding splashing (soak linen in 0.05% chlorine for approximately 30 minutes. Finally, rinse with clean water and let linen dry fully in the sunlight.
- Place all used tissues, disposable gloves, facemasks, and other contaminated items in a lined container before disposing them of with other household waste.

Clean and disinfect: All "high-touch" surfaces, such as counters, table tops, doorknobs, bathroom fixtures, toilets, phones, keyboards, tablets, and bedside tables, every day. Also, clean any surfaces that may have blood, stool, or body fluids on them.

Wash hands: with soap and water for at least 40 seconds or, if soap and water are not available, clean your hands with a 70% alcohol-based hand sanitizer. Wash often and especially after touching

HOW TO USE A MASK

1. Use a mask if and only when:
 - a) You develop cough or fever.
 - b) You are visiting a health facility.
 - c) You are caring for an ill person and/or entering the room of an infected person.
2. Use a Mask Correctly:

- a) Unfold pleats, facing down, place over nose, mouth and chin.
- b) Fit nose piece over nose-bridge. Tie strings upper string tied - top of head above ears lower string at the back of the neck.
- c) Leave no gaps on either side of the mask, adjust to fit.
- d) Do not pull the mask down or hang it from the neck e. Avoid touching the mask while in use.
3. Replace masks with a new clean, dry mask as soon as they become damp/humid. Do not re-use single-use masks.
4. Remove the mask
 - a) By using appropriate technique (i.e. do not touch the front but remove the lace from behind)
 - b) By first untying the string below and then the string above and handle the mask using the upper strings. Do not touch other surfaces of the mask while removing.
5. Disposing of Mask After removal or whenever you inadvertently touch a used mask, clean hands by using an alcohol-based hand rub or soap and water. Discard single-use masks after each use and dispose of them immediately upon removal by soaking in household bleach solution and then throwing in a closed dustbin

SUPPORT HOME QUARANTINE FOR FAMILY MEMBERS

- Visiting Contact: Contact tracing done by visiting the local residence of the contact(s) by Health Personnel, (including ASHA/ANM) Telephone may be used in certain circumstances or for follow-up.
- Introducing purpose: Introduce yourself, explain the purpose of contact tracing, and collect data in prescribed format.
- Formats for contact tracing: Contact tracing to include identification of extended social networks and travel history of cases during the 28 days after onset of illness.
- Monitoring: Contacts of confirmed cases traced and monitored for at least 28 days after the last exposure to the case patient for evidence of SARS-CoV-2 symptoms as per case definition.
- Follow-up: Information about contacts can be obtained from: a. Patient, his/her family members, b. persons in patient's workplace or school associates, or others with knowledge about the patient's recent activities and travel

WHO IS A SUSPECT?

Anyone with acute respiratory illness {fever and at least one sign/symptom of respiratory disease (cough, difficulty in breathing), A history of travel to or residence in a country/area or territory reporting local transmission of Covid-19 disease during the 14 days prior to symptom onset; Anyone with any acute respiratory illness AND having been in contact with a confirmed Covid-19 case in the last 14 days prior to onset of symptoms; Anyone with severe acute respiratory

infection {fever and at least one sign/symptom of respiratory disease (cough, difficulty in breathing} AND requiring hospitalization; A case for whom testing for Covid-19 is inconclusive. Laboratory Confirmed case: A person with laboratory confirmation of Covid-19 infection, irrespective of clinical signs and symptoms.

WHO IS A CONTACT CASE

Staying in the same house without proper protection with Covid-19 patient, staying in the same close environment as a Covid-19 patient (including workplace, classroom, household, gatherings). Traveling together in close proximity (less than 1 m) with a symptomatic person who later tested positive for Covid-19, person providing direct care to a Covid-19 patient. Epidemiological link may have occurred within a 14-day period before the onset of illness in the case under consideration.

THE PRECAUTIONS FOR INDIVIDUAL DURING COMMUNITY VISITS

- Maintain distance of 1 meter from people and avoid close physical contact when you are communicating
- Use a three layered mask to cover your face. Make sure it is properly worn
- Avoid touching your face (eyes, nose, and mouth) at all times. Frequently wash your hands with soap and water for 40 sec frequently, or use 70% alcohol based hand-rub
- Wash your hands with soap and water for 40 sec or use a 70% alcohol based hand rub.
- Avoid touching high touch points like door bells, door knobs, support rails and handles, hand rails etc.

THE PRECAUTIONS & SAFETY MEASURES ON REACHING HOME

Carefully remove your face mask and gloves using the correct method, avoid touching the front of your mask at all time, and untie lace from behind and do not let the mask hang low around your neck. Dispose used mask and gloves by throwing them in a covered dustbin. (See: MASK MANAGEMENT). If you have carried your bag/register, wipe them down with the disinfectant solution Wash your hands with soap and water for 40 secs or 70% alcohol based hand-sanitizer before you touch anything else. If you get any symptoms like cold, dry cough, fever, contact the nearest Government Facility or District Surveillance officer immediately.

Here are some precautions at office recommended

- ✓ Avoid touching lift buttons or use a tissue to touch it. If you are taking the stairs, avoid touching the walls or railing.
- ✓ Make sure there are not more than two-three people in the lift, else take the next one. While in the lift, do not face each other.
- ✓ Do not remove the face mask at any point. It is recommended that you do not use the same mask daily.

- ✓ Before beginning your day's work, disinfect the desk and the laptop/desktop. As you sit, make sure you at least a seat's distance between you and your colleague.
- ✓ Maintain social distancing when you interact with people. Avoid shaking hands. In case of a meeting, make sure there are not too many people in the room at a time so that you can maintain social distancing.
- ✓ If you absolutely have to touch a handle or a doorknob, sanitize your hands immediately.
- ✓ At lunchtime, wash your hands properly before you start eating.

When you leave for the office

- ✓ Do not forget to wear a face mask before stepping out.
- ✓ Carry a soap paper, small soap bar or an alcohol-based hand sanitizer to office.
- ✓ Carry your own glass, mug, and bottle and spoon so that you can avoid using cutlery from the pantry.
- ✓ Carry your own power bank and charger to avoid borrowing it from a colleague.
- ✓ If you are using your personal vehicle, make sure to disinfect the most-touched parts of the car once more, including the door and door handle, dash, steering wheel and gear lever, seat and seat belt, before you start. Clean your two-wheeler similarly, that is, sanitizes the frequently-touched parts.
- ✓ Do not share your two-wheeler with anyone to maintain social distancing. If two people are travelling in a car, they should sit in a criss-cross pattern in the front and back respectively to maintain distance.

NEW DRUG AND TREATMENT OF COVID-19

Sr. No	Drug	Category	Treatment
1	Remdesivir	Antiviral	Speeds recovery by shutting down viral replication in the body. Hospitalized patients given Remdesivir were discharged within 11 days on average, compared to 15 days for patient on standard care.
2	Glucocorticoids	Corticosteroid	Calms acute inflammatory response to slow disease progression by preventing the body from pumping out inflammatory chemicals.
3	Hydroxychloroquine	Anti-malaria	Found to inhibit the activity of Sars-Cov-2 in lab studies by decreasing the acidity in endosomes, which are compartment inside cells that some viruses co-opt to enter cells and cause infection.
4	Dexamethasone	Corticosteroid	Modulates immune-mediated lung injury and slows progression to respiratory failure and death. It cut the risk of death by third for

			patients on ventilators.
5	Favipiravir	Antiviral	This broad-spectrum antiviral works by selectively inhibiting RNA polymerase, which is needed for the replication of Sars-CoC-2 inside the human body to cause severe disease.
6	Convalescent Plasma	Plasma Therapy	Infection-fighting antibodies from the blood of recovered people given to ill patients to boost their immunity.
7	Tocilizumab	Monoclonal Antibody	Calms the aberrant hyper-immune response called cytokine storm by acting against inflammatory chemicals to fight infection.

Table:1 NEW DRUG AND TREATMENT OF COVID-19

Vaccines under development

Sr. No	Candidate	Mechanism	Sponsor	Trial phase	Institution
1	AZD1222	Replication deficient viral vector vaccine (adenovirus from chimpanzees)	The university of Oxford: AstraZeneca; IQVIA; Serum Institute of India	Phase 3	The university of Oxford, the Jenner Institute
2	Covaxin	Inactivated vaccine	Bharat Biotech; National Institute of Virology	Phase 2	-
3	CoronaVac	Inactivated vaccine (formalin with alum adjuvant)	Sinovac	Phase 3	Sinovac research and development Co, Ltd.
4	mRNA-1273	mRNA- based vaccine	Moderna	Phase 3	Kaiser Permanente Washington health Research Institute
5	BNT162	mRNA- based vaccine	Pfizer, BioNTech	Phase2/3	Multiple study sites in Europe and North America
6	Ad5-nCoV	Recombinant vaccine (adenovirus type 5 vector)	CanSino Biologics	Phase 3	Tongji Hospital; Wuhan, China
7	Bacillus	Live- attenuated	University of	Phase2/3	University of

	Calmette-Guerin	vaccine	Melbourne and Murdoch Children's Research Institute; Radboud University Medical Center; Faustman Lab at Massachusetts General hospital		Melbourne and Murdoch Children's Research Institute; Radboud University Medical Center; Faustman Lab at Massachusetts General hospital
8	NVX-CoV2373	Nanopartical vaccine	Novavax	Phase 2b	Novavax
9	Sputnik V	Non- replicating viral vector	Gamaleya research Institute, Acellena contract Drug research and development	Phase 1/2	various
10	ZyCoV-D	DNA vaccine (plasmid)	Zydus Candila	Phase 2	Zydus Candila
11	Ad26.COV2-S	Non- replicating viral vector	Johnson and Johnson	Phase 1/2	Johnson and Johnson
12	AG0301-COVID19	DNA vaccine	AnGes, Inc.	Phase 1/2	AnGes, Inc. Japan Agency for Medical Research and Development
13	BBIBP-CorV	Inactivated vaccine	Beijing Institute of Biological products; China National Pharmaceutical Group (Sinopharm)	Phase 1/2	Henan Provincial Center for Disease Control and Prevention
14	GX-19	DNA vaccine	Genexine	Phase 1/2	-
15	INO-4800	DNA vaccine (plasmid)	Inovio Pharmaceuticals	Phase 1/2	Center of Pharmaceutical Research, Kansas City. Mo; University of Pennsylvania, Philadelphia
16	LUNAR-COV19	Self- amplifying RNA vaccine	Imperial College London	Phase 1/2	Imperial College

	(ARCT-021)				London
17	SCB-2019	Protein subunit vaccine	GlaxoSmithKline, Sanofi, Clover Biopharmaceutical, Dynavax and Xiamen Innovax	Phase 1	Linear Clinical Research (Australia)
18	AdimrSC-2f	Protein subunit vaccine	Adimmune	Phase 1	Adimmune
19	COVAX-19	Monovalent recombinant protein vaccine	Vaxine Pty Ltd.	Phase 1	Royal Adelaide Hospital
20	CVnCoV	mRNA-based vaccine	CureVac	Phase 1	CureVac

Table:2 Vaccines under development

Time Taken to Develop Notable Vaccines

Sr. No	Vaccine	Time Period to develop notable vaccine
1	Average vaccine development	10.7 years
2	Polio (1948-1955)	7 years
3	Measles (1954-1963)	9 years
4	Chickenpox (1954-1988)	34 years
5	Mumps (1963-1967)	4 years
6	HPV (1991-2006)	15 years
7	HIV	36 years and counting

Table:3 Time Taken to Develop Notable Vaccines

Source: The Washington Post

Expected timeline for leading vaccine candidate approvals

Sr. No	Company / Collaboration Vaccines	Platform	Initial Phase 1	Phase 1 internal data	Initial Phase 2/3	Pivotal data	Earliest Approval
1	Pfizer / BioNTech	mRNA	May	Jul 1	Jul 27	October	2Q21
2	Moderna	mRNA	March	May 18	Jul 27	October	2Q21
3	AZN / Oxford	Ad Vector	April	Jul 20	Sep 3	4Q20	Mid-21
4	JNJ / Emergent	Ad Vector	July	3Q20	September	Early 2021	Mid-21
5	CanSino	Ad	March	May 22	Aug 26	1Q2021	2H21

		Vector					
6	Novavax	mRNA	May	Aug 4	September	1H21	2H21
7	Sanofi / GSK	Subunit	September	December	December	1H21	2H21
8	Inovio	DNA	April	Jun 30	September	1H21	2H21
9	CureVac	mRNA	June	3Q20	YE2020	1H21	2H21
10	Sanofi / Translate Bio	mRNA	November	1Q21	2Q21	4Q21	2022
11	Merck /Themis	Subunit	Aug 4	YE2020	YE2020	1H21	2022
12	Merck / IAVI	rVSV	2H20	YE2020	1H21	1H21	2022
Neutralizing antibodies							
13	Regeneron	NAB	June	September	Jul 16	4Q20	YE20
14	Lilly / AbCellera	NAB	June	Sep 15	Jun 15	4Q20	YE20
15	Vir	NAB	N/A	N/A	Aug 31	YE2020	1Q21
16	Amgen	NAB	3Q20	TBA	TBA	TBA	TBA

Table:4 Expected timeline for leading vaccine candidate approvals

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