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FAQ # 01 (05 May 2021): COVID-19 TRANSMISSION

1. How does COVID-19 spread among people?

Three important modes of transmission of Covid-19 are as below:-

(a) **Droplet Transmission.** The virus spreads mainly amongst people through droplet transmission where droplets from infected person are inhaled by a susceptible person through eyes, nose or mouth, who are in close contact with each other, typically within 1 meter (short-range).

(b) **Air-Borne Transmission.** The virus can also spread through this mode in poorly ventilated and/or crowded indoor settings, where people tend to spend longer periods of time. This is because aerosols remain suspended in the air or travel farther than 1 metre (long-range).

(c) **Fomite Transmission.** People may become infected by touching surfaces (fomites) that have been contaminated by the virus when touching their eyes, nose or mouth without cleaning their hands.

2. How the scientific consensus about how SARS-CoV-2 is transmitted has shifted over a period of time?

(a) Although *droplet transmission* is still considered the main route of transmission, growing evidence supports the contribution of smaller “*aerosol*” particles in some cases (air-borne) - particularly where *people are spending long periods in poorly ventilated spaces with an infected person*. These can linger in the air and be breathed into the lungs, triggering an infection.

(b) Meanwhile, the evidence for *fomite transmission* has grown less certain. Several recent studies have attempted to grow coronavirus from swabs taken from real-world settings - such as hospital furniture or hotel rooms occupied by infected people. Although viral RNA could be recovered, the viruses on these swabs were unable to infect cultured cells, suggesting they were no longer viable.

(c) The *US CDC* says that while it’s possible that respiratory droplets could land on surfaces and objects, and that someone could become infected by touching them, “this is not thought to be a common way that COVID-19 spreads.”
(d) The WHO says “despite consistent evidence as to SARS-CoV-2 contamination of surfaces and the survival of the virus on certain surfaces, there are no specific reports which have directly demonstrated fomite transmission.”

(e) This does not mean surface transmission never occurs. As the WHO points out, it is difficult to disentangle the relative contributions of inhaled droplets and contaminated surfaces, because people who have come into contact with potentially infectious surfaces have generally also been in close contact with infected individuals.

(f) If surfaces do play a role in transmission, it’s also likely that some like frequently touched surfaces are riskier than others. Be particularly wary of objects that have been in contact with someone’s mouth or nose, such as used facemasks, crockery and cutlery - if you touch them, be sure to wash your hands afterwards. And if someone in your household has COVID-19, or if you’re working in a hospital or other workplace where people could be infected, frequently touched surfaces such as door knobs, hand rails, toilet flushes and hand towels might be more likely to harbour the virus, so be mindful of them and ensure they’re frequently disinfected.

References.


4. GAVI. Available at https://www.gavi.org/vaccineswork/how-important-are-surfaces-transmission-covid-19?gclid=Cj0KCQjw-LOEBhDCARIIsABrC0Tnd-uSP48NjE6Fr5VdileF59RyuY2qlqjz6qlqFQLNZkp5V1NxAaUAh_aEALw_wcB

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FAQ # 02 (05 May 2021): HIGH-RISK SETTINGS AND COVID APPROPRIATE BEHAVIOUR

1. Are there certain settings where COVID-19 can spread more easily?

(a) Yes, any situation in which people are in close proximity to one another for long periods of time increases the risk of transmission. Indoor locations, especially settings where there is poor ventilation, are riskier than outdoor locations. Activities where more particles are expelled from the mouth, such as singing or breathing heavily during exercise, also increase the risk of transmission.

(b) The “Three C’s” are a useful way to think about this. They describe settings where transmission of the COVID-19 virus spreads more easily:

   (i) Crowded places;

   (ii) Close-contact settings, especially where people have conversations very near each other;

   (iii) Confined and enclosed spaces with poor ventilation.

(c) The risk of COVID-19 spreading is especially high in places where these “3Cs” overlap.

2. What are the most important aspects of COVID Appropriate Behaviour

(a) Wear a mask that covers your nose and mouth to help protect yourself and others.

(b) Stay 6 feet apart from others who don’t live with you.

(c) Get a COVID-19 vaccine when it is available to you.

(d) Avoid crowds and poorly ventilated indoor spaces.

(e) Wash your hands often with soap and water. Use hand sanitizer if soap and water aren’t available.
3. **How to Select a Mask?**

   (a) **Do Choose Masks that:**-

   (i) Have two or more layers of washable, breathable fabric.

   (ii) Completely cover your nose and mouth.

   (iii) Fit snugly against the sides of your face and don’t have gaps.

   (iv) Have a nose wire to prevent air from leaking out of the top of the mask.

   (b) **Do not choose Masks that:**-

   (i) Are made of fabric that makes it hard to breathe, for example, vinyl.

   (ii) Have exhalation valves or vents which allow virus particles to escape.

   (iii) Are prioritized for healthcare workers, including N95 respirators.

4. **How to ensure your mask works the best it can?**

   (a) **Make sure your mask fits snugly against your face.** Gaps can let air with respiratory droplets leak in and out around the edges of the mask.

   (b) **Pick a mask with layers to keep your respiratory droplets in and others’ out.** A mask with layers will stop more respiratory droplets getting inside your mask or escaping from your mask if you are sick.

   (c) **Double Masking.**

5. **What is Double Masking?**

   (a) **Double masking is wearing a disposable mask underneath a cloth mask.** The cloth mask should push the edges of the disposable mask against your face.

   (b) **Do not Combine two disposable masks.** Disposable masks are not designed to fit tightly and wearing more than one will not improve fit.

   (c) **Do not Combine a KN95 (or N95) mask with any other mask.** Only use one KN95 (or N95) mask at a time.

**References.**


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FAQ # 03 (05 May 2021): SARS-CoV-2 VIRUS VARIANTS

1. What causes virus to change to a new variant?

Mutations are minor changes in the viral genome which occurs due to DNA copying mistake during replication of the virus. The more a virus replicates, as during community transmission, higher are the chances of mutation and creation of new variant.

2. How does the variants change the properties of the virus?

Depending on where the changes are located in the virus’s genetic material, the properties of the virus may be affected, such as transmission (for example, it may spread more or less easily) or severity (for example, it may cause more or less severe disease), immune escape (evading immunity), re-infection or effect on vaccine efficacy.

3. What impact do the new variants of the COVID-19 virus have on vaccines?

The COVID-19 vaccines that are currently approved elicit a broad immune response involving a range of antibodies and cells and are expected to provide some protection against new virus variants.

4. How can the vaccine variants be detected?

The variants are usually detected by genomic sequencing available at specialised molecular laboratories e.g NIV and CCMB.

5. Do vaccines protect against the virus variants?

The COVID-19 vaccines are expected to provide at least some protection against new virus variants and any virus change or mutation should not make vaccines completely ineffective. If any of these vaccines become less effective against one or more variants, it will be possible to change the composition of the vaccines to protect against these variants.

6. What are the common COVID variants of concern detected and what are their potential concerns?

(a) As per CDC, SARS-CoV-2 variants are classified as follows:

(i) Variant of Interest (VOI) - associated with reduced neutralization by antibodies generated against previous infection or vaccination, reduced efficacy of treatments, potential diagnostic impact, or predicted increase in transmissibility or disease severity.
Variant of Concern (VOC) - there is **evidence of** increase in transmissibility or disease and severity, reduced efficacy of treatments and reduced neutralization by antibodies.

Variant of High Consequence (VOHC) - clear evidence of reduced **effectiveness** relative to previously circulating variants.

(b) Following table is a reference guide to SARS-CoV-2 variants and their potential concerns:

<table>
<thead>
<tr>
<th>Variant Name(s) VOI/VOC/VOHC</th>
<th>Potential Concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transmissibility</td>
</tr>
<tr>
<td>B.1.1.7, 501Y.V1, VOC-202012/01 (UK variant)</td>
<td>Increased transmissibility</td>
</tr>
<tr>
<td>B.1.351, 501Y.V2 (South African variant)</td>
<td>Increased transmissibility</td>
</tr>
<tr>
<td>P.1, P.2 (Brazilian/Amazons variants)</td>
<td>Potentially more transmissible</td>
</tr>
<tr>
<td>B.1.525, B.1.526 (New York variants)</td>
<td>Potentially more transmissible</td>
</tr>
<tr>
<td>P.3 (variant originating in the Philippines)</td>
<td>Potentially more transmissible</td>
</tr>
<tr>
<td>Variant Name(s) VOI/ VOC/ VOHC</td>
<td>Potential Concerns</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td></td>
<td>Transmissibility</td>
</tr>
<tr>
<td></td>
<td>Virulence (Disease Severity)</td>
</tr>
<tr>
<td></td>
<td>Vaccine Efficacy or Immune Evasion</td>
</tr>
<tr>
<td>B.1.617 (Indian variant – Double mutant)</td>
<td>Potentially more transmissible</td>
</tr>
<tr>
<td>B.1.618 (Indian variant – Triple mutant)</td>
<td>Potentially more transmissible</td>
</tr>
</tbody>
</table>

References

1. World health organisation. Available at [The effects of virus variants on COVID-19 vaccines](https://www.who.int) (who.int)
2. CDC Atlanta. Available at [Surveillance for SARS-CoV-2 Variants](https://www.cdc.gov) | CDC
3. Emerging Mutations & Variants | Thermo Fisher Scientific - IN
4. The S Gene Advantage: TagPath COVID-19 Tests May Help Early Identification of B.1.1.7 - Ask a Scientist (thermofisher.com)

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FAQ # 04 (05 May 2021): COVID-19 VACCINES

1. **What are the contraindications to COVID vaccine?**

The contraindication for taking COVID vaccines is in persons with a history of an **anaphylactic** or **allergic reaction** to a previous dose of COVID-19 vaccine. Those with immediate or delayed onset anaphylaxis or allergic reaction to vaccines or injectable therapies, pharmaceutical products, or food items, can take the vaccine, but with precautions, under medical supervision.\(^1,2,3\)

2. **Is it safe to take COVID vaccine while being pregnant or lactating?**

There is currently limited data on the safety of COVID-19 vaccines in this group as pregnant and lactating women have not been included in the clinical trials. However, based on how these vaccines work in the body, experts believe they are **unlikely to pose a risk** for individuals who are pregnant or lactating.\(^4,5,6\)

3. **It is understood that one needs to undertake caution in vaccinating persons with a history of bleeding or coagulation disorder. How does a person know if he/she has a coagulation disorder? What tests can be conducted?**

There are a few bleeding disorders like 'haemophilia' where one should take the vaccine under the supervision of their treating physician. Patients who are admitted in hospital or ICU and have bleeding problems should delay the vaccination till they are discharged. However, several people with heart and brain disorders, on blood thinners like aspirin and antiplatelet drugs, can continue with their medicines and have the vaccines. For them, vaccines are absolutely safe.\(^1\)

4. **Will COVID vaccines provide long term protection?**

Because COVID vaccines have only been developed in the past few months, it is too early to know the duration of protection of COVID-19 vaccines. Research is ongoing to answer this question. However, it is encouraging that available data suggest that most people who recover from COVID-19 develop an immune response that provides at least some period of protection against reinfection – although it is still not certain how strong this protection is, and how long it lasts.\(^1,3\)

5. **After getting a COVID-19 vaccine, will I test positive for COVID-19 on a viral test?**

**No.** The vaccines currently recommended for use either act against the spike protein
(COVISHIELD and SPUTNIK) or are prepared from killed virus (COVAXIN) and will NOT test positive on RTPCR/Rapid Antigen tests. If the body develops an immune response to vaccination, which is the goal, one may test positive on antibody tests.

6. **Can a person who has suffered from COVID-19 (confirmed or suspected) infection be vaccinated?**

A person currently suffering from COVID-19 infection should defer vaccination for 14 days after complete resolution symptoms so that they are non-infectious and will not infect others at the vaccination site. After full recovery, such individuals should wait for **04 to 08 weeks** (not corroborated by any evidence but recommended in guidelines) before getting the vaccine.1,3

7. **When can a person with past h/o receiving plasma therapy or monoclonal antibodies take the vaccine?**

In case an individual had received plasma therapy or monoclonal antibodies, it is recommended to **defer vaccination for 90 days.**

8. **What is a Break-Through Case?**

A Break-Through Case is a person who has been **tested COVID positive ≥14 days after completing two doses of COVID-19 vaccine.** As per available data till date, breakthrough cases have occurred only in a small percentage of people. No unexpected patterns (severity or death) have been identified among people with reported vaccine breakthrough infections.

9. **Will COVID vaccines reduce the severity and death due to COVID?**

The COVID-19 vaccines create a broad immune response and have been found to be effective at preventing serious illness and death. It is strongly recommended that all eligible people get a COVID-19 vaccine as soon as one is available to them.1,2,3

**References.**

2. MoHFW. [COVID-19 Vaccine FAQs](https://mohfw.gov.in)

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1. **What tests are available to detect COVID-19?**

(a) **Molecular Test** like Reverse Transcriptase Polymerase chain reaction (**RTPCR**) and **TrueNat** are the gold standard tests used to detect SARS-CoV-2 infection. Molecular tests detect virus by amplifying the viral genetic material to detectable levels. They require Bio Safety Level 2 to 3 laboratory to perform.

(b) **Rapid Antigen Detection Test (RADT)** is also used to detect SARS-CoV-2 infection and they detect the viral proteins (known as antigens). These tests are cheaper than RTPCR, quicker, and does not require elaborate laboratory settings to perform. For both tests, the samples are collected from the nose and/or throat with a swab. Improper sample collection can reduce the accuracy of tests.

(c) **Antibody Test** is used to detect protective antibody produced by body against SARS-CoV-2 and test positivity denotes past COVID infection. The IgM Antibody test detects antibody against recent infection whereas IgG Antibody test indicates old infection. They are primarily used for surveillance (to estimate the prevalence of infection in a community) and not for diagnosis of the disease. Blood sample is used for Antibody Test.

2. **How accurate are these tests?**

(a) **RTPCR/ TRUNAT** are the gold standard tests and have a high sensitivity and specificity of above 95%. It means that these test have very low False Negative results - once tested negative, the result indicates absence of virus. However, it can detects any virus remnant/ dead virus in recovered non-infectious person, leading to false positive results.

(b) **RADTs** are less accurate than Molecular tests and perform best when there is more virus circulating in the community (more number of cases in the community, containment zones). A person tested as positive by RAT is definitely infected with SARS-CoV-2 and infectious to others. However, a symptomatic person tested negative by RAT may still be infected with SARS-CoV-2, meaning they might give false negative result, and in such cases, RTPCR/ TRUNAT is to be conducted.

(c) **Antibody Tests** are less accurate than Molecular Tests and chances of detection of antibodies are higher 14 days after onset of infection.
3. **Does high viral transmission in community (when more number of cases are present) have a bearing on the outcome of tests?**

As the case count increases in a community, the sensitivity of low accuracy test like RADT increases and they are able to detect SARS-CoV-2 infected person more accurately. On the other hand, molecular tests like RTPCR/ TRUNAT will also detect more cases, some of which would probably be non-infectious.

4. **Given the above considerations, what test should be used when?**

(a) **RTPCR/ TRUENAT** are used to detect Symptomatic person and High Risk Contacts of confirmed cases (07 to 10 days if asymptomatic or earlier if becomes symptomatic). They are also used before discharge of a severe case from hospital (on case to case basis). In addition, RTPCR test is conducted before a treatment procedure at hospital or when mandated before travel

(b) **RADTs** perform best when there is more virus circulating in the community (more number of cases in the community). Hence, they are used for rapid detection of cases in field settings like in outbreaks, containment zones and in community transmission phase. They can also be used to test person after travel related quarantine before entering afloat platform and high-density work place.

(c) **Antibody Tests** are primarily used for surveillance (to estimate prevalence of infection in a community) and estimate vaccine effectiveness.

While a person is waiting for test results, they should remain isolated from others.

**References.**


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1. **What are the General Principles on Which COVID Vaccines Work?**

   Around the world, presently, there are 100 COVID-19 vaccine candidates undergoing clinical trials and 184 candidates in pre-clinical development. Vaccines try to achieve optimum immunity to the virus, and occasionally might also be able to stop transmission\(^1\). In India, the following candidate vaccines have been approved for use:

   (a) **Oxford–AstraZeneca (Covishield).** In this vaccine, a Chimpanzee Adenovirus (ChAdOx) vector is introduced into the human body cells, which amplifies the spike protein (the same protein which causes the severe inflammation). The body, in response, triggers a broad and robust immunity which prevents further entry and spread of the SARS CoV-2 virus in the body.

   (b) **Sputnik.** This vaccine uses two different Adenovirus vectors, Ad26 and Ad5 to boost the immunity, like the same technology as used in Covishield.

   (c) **Covaxin.** The vaccine is developed using Whole-Virion Inactivated Vero Cell. Inactivated virus cells or dead virus, incapable of infecting people, are prepared in cells outside the body or in the laboratory. These dead virus cells are able to trigger the immune system to mount a defensive reaction against an infection.

2. **How can the Three Vaccines be Compared as per their Schedule, Efficacy and Storage?\(^2\)**

<table>
<thead>
<tr>
<th></th>
<th>COVAXIN</th>
<th>COVISHIELD</th>
<th>SPUTNIK</th>
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</thead>
<tbody>
<tr>
<td>Vaccine Platform</td>
<td>Whole-Virion Inactivated Vero Cell</td>
<td>Single Viral Vector (non Replicating)</td>
<td>Two Viral Vectors (non Replicating)</td>
</tr>
<tr>
<td>Schedule</td>
<td>Two doses (0,4 weeks)</td>
<td>Two doses (0,12-16 weeks)</td>
<td>Two doses (0,3 weeks)</td>
</tr>
<tr>
<td>Route of</td>
<td>Intramuscular</td>
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<td>Intramuscular</td>
</tr>
<tr>
<td>Administration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developer</td>
<td>Bharat Biotech</td>
<td>Serum Institute of India</td>
<td>Gamaleya Research Institute, Moscow</td>
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<tr>
<td>Current status of evaluation</td>
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<td>Completed Phase III clinical trial (Efficacy Trial)</td>
<td>Completed Phase III clinical trial (Efficacy Trial)</td>
</tr>
<tr>
<td>Storage</td>
<td>2 ° C to 8 ° C</td>
<td>2 ° C to 8 ° C</td>
<td>-18 ° C</td>
</tr>
<tr>
<td>Efficacy (as per Phase II trial report)</td>
<td>78%</td>
<td>70.4%</td>
<td>91%</td>
</tr>
</tbody>
</table>
3. Recently, the Govt of India has come out with a guideline that the 2nd dose of COVISHIELD vaccine is to be given 12 to 16 weeks after the 1st dose. What is the justification behind this policy?

The second dose of the vaccine gives a boost to the immune system so that the antibody response, T cell mediated response (to fight infection in recent future) and memory response (to fight infection in distant future) are very strong. The memory response lasts for a long time, it kicks off the body response quickly. Recent evidence has found that delaying the second dose up to 12 to 16 weeks actually gave a better immune boost.³

4. When can an Individual who has Recovered from COVID, take the Vaccine?

Studies have concluded that naturally acquired immunity as a result of past COVID infection may provide approximately 83% protection against reinfection, compared to people who have not had the disease before. This appears to last at least for 3 to 5 months from first becoming sick. As per recent guidelines of MoHFW, an individual who has recovered from COVID, can take the vaccine after three months.⁴

5. Can Two Doses of COVID Vaccine be Taken from Two Different Manufacturers?

Presently, interchangeability of vaccines, which means the first dose with one vaccine and the second dose with a different vaccine, is not permitted. However, science on COVID is changing and evolving and the knowledge base is growing. Clinical trials have been initiated with vaccine candidates that are looking at interchangeability. Presently, vaccine trials are being conducted with Pfizer and AstraZeneca and Moderna and Novavax vaccines, results of which are still awaited.⁵

6. What about vaccination for children? Can COVID vaccines presently available in India be administered to children?

Vaccination for children is in the developmental phase. Moderna has initiated Phase 2/3 trial of their vaccine in healthy children (06 months to <12 years).⁶ India’s apex drug regulator has granted permission for conducting the phase 2/3 clinical trial of Bharat Biotech’s Covaxin Covid-19 vaccine in the age group of 2 to 18. ⁷ Till date only Pfizer-BioNTech vaccine has been approved for administration in adolescents aged 12 to 15 years.

References.

1. There are four types of COVID-19 vaccines: here’s how they work | Gavi, the Vaccine Alliance.

2. Draft landscape and tracker of COVID-19 candidate vaccines (who.int)

4. Past COVID-19 infection provides some immunity but people may still carry and transmit virus - GOV.UK (www.gov.uk)

5. Researchers could report on interchangeability of Covid vaccines by next month - Pulse Today.

6. Moderna Announces First Participants Dosed in Phase 2/3 Study of COVID-19 Vaccine Candidate in Pediatric Population | Moderna, Inc. (modernatx.com)

7. Bharat Biotech’s Covaxin approved for phase 2/3 trials on children | India News, The Indian Express

Disclaimer. The information provided is intended only for educational purposes for intra Navy service personnel & their families, and is based on the currently available scientific evidence. It should not be quoted out of context.
1. **What is Black Fungus (Mucormycosis)?**

Black Fungus (Mucormycosis) is a fungal infection mainly affecting people with chronic health problems that reduces their immunity (ability to fight environmental pathogens). The fungus (mold) most commonly belongs to Rhizopus species and order Mucorales, hence the name Mucormycosis.

2. **Who is at Risk for Mucormycosis?**

People with comorbidities (chronic medical ailments), uncontrolled diabetes mellitus, immunosuppression by steroids or prolonged ICU stay can be at risk for Mucormycosis. Self-medication and indiscriminate use of Steroids and Oxygen have been suspected to have link between the rise in Black Fungus cases and Second wave of the COVID-19 Pandemic.

3. **What are the Clinical Forms of Mucormycosis?**

There are five major clinical forms of Mucormycosis; of these, **Rhinocerebral** (affecting nasal sinuses and sometimes brain) and **Pulmonary** (lungs) are the most common. Other rare forms are **Skin**, **Gastrointestinal** and **Disseminated Type** (spreads through the bloodstream to affect any part of the body).

4. **What are the Symptoms and Signs of Mucormycosis?**

Symptoms of **Rhinocerebral (sinus and brain) Mucormycosis** include one-sided facial swelling, headache, nasal or sinus congestion, black lesions on nasal bridge or upper inside of mouth that quickly become more severe and fever. Symptoms of **pulmonary (lung) mucormycosis** include fever, cough, chest pain, and shortness of breath.

5. **How is Diagnosis of Mucormycosis Confirmed?**

A sample of fluid from your respiratory system or a tissue biopsy, in which a small sample of affected tissue is analysed in a laboratory for evidence of Mucormycosis under a microscope or in a fungal culture.

6. **How Does Someone Get Mucormycosis?**

Patients who are at high risk (as brought out in Point-2 above) get Mucormycosis through **inhalation of fungal spores** from the air either from the environment or contaminated
devices (like oxygen delivery equipment/ ventilators etc).

7. **Is Black Fungus Contagious?**

Unlike COVID-19, Mucormycosis is not contagious and does not spread from one person to other.

8. **What is the Risk of Death Among Patients of Mucormycosis?**

Mucormycosis is known to be a rare infection to occur but when it occurs it will be usually a life-threatening infection. A review of published mucormycosis cases found an overall all-cause mortality rate of 54%. The mortality rate varied depending on underlying patient condition, type of fungus, and body site affected (for example, the mortality rate was 46% among people with sinus infections, 76% for pulmonary infections, and 96% for disseminated Mucormycosis).

9. **How do you Prevent Mucormycosis in COVID-19 Infections?**

Patients (especially known Diabetics) who have recovered from COVID-19 should monitor their blood glucose levels regularly. Use of steroids by COVID-19 patients should be judicious. For oxygen therapy, patients should use clean and sterile oxygen-delivery equipment.

*After recovering from coronavirus, one should closely monitor and should not miss any warning signs and symptoms mentioned above, as the fungal infection is found to emerge even weeks or months after recovery.*

10. **How is Mucormycosis Treated?**

Antifungal medicines like Amphotericin B are available for treatment. Often, mucormycosis requires surgery to cut away the infected tissue. Early intervention/treatment is the key to prevent mortality due to Mucormycosis.

**References.**

FAQ # 08 (24 May 2021) - Convalescent Plasma Therapy for COVID-19

1. **What is Convalescent Plasma?**

Convalescent refers to anyone recovering from a disease. Plasma is the yellow, liquid part of blood that contains antibodies. Antibodies are proteins made by the body in response to infections.

2. **What is the role of Convalescent Plasma in COVID-19 Management?**

Convalescent plasma from patients who have already recovered from coronavirus disease 2019 (COVID-19) may contain antibodies against COVID-19 and may be effective in treating COVID-19. The potential benefits of the product may outweigh the potential risks of the product for patients hospitalized with COVID-19. Convalescent plasma collected from ABO matched donors with high neutralizing titers can be given to patients at risk of developing severe COVID in early stages of the disease. However, it should be considered an experimental therapy and should be used with caution.

3. **I recently recovered from COVID-19, Can I donate Convalescent Plasma?**

COVID-19 convalescent plasma must only be collected from recovered individuals if they are eligible to donate blood. Individuals must have had a prior diagnosis of COVID-19 documented by a laboratory test and meet other laboratory criteria. Individuals must have fully recovered from COVID-19, with complete resolution of symptoms for at least 14 days before donation of convalescent plasma.
4. **Who are the potential donors and recipients?**

**Potential donors**
- Men
- Women who have never been pregnant

<table>
<thead>
<tr>
<th>Appropriate Age</th>
<th>18-60 year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate Body Weight</td>
<td>&gt;50 kg</td>
</tr>
</tbody>
</table>

**Diagnosis**
- COVID-19 RT-PCR positive or Rapid Antigen Test positive
- Physical Status After 14 days of symptom resolution (testing negative for COVID-19 is not necessary)
- Screening to rule out ABO Incompatibility & blood borne pathogens
  - HIV
  - HBV
  - HCV etc.

**Required Concentration**
- IgG antibody against COVID-19 Titre of 1:640 (ELISA)
- 13 AU (Arbitrary Unit)/mL (CLIA)
- Neutralising Antibody Titres of 1:80 (PRNT/MNT)

5. **How much blood is taken during plasma donation?**

*Maximum* volume that can be collected in one session is 500 ml.

6. **How frequently a donor can donate convalescent plasma if eligible?**

Donors are advised to donate not more than twice a month.

7. **What are the current recommendations of Convalescent Plasma treatment in India?**

At present, use of convalescent plasma therapy is **not recommended** due to availability of **inadequate scientific evidence**. The PLACID trials conducted by ICMR revealed that Convalescent Plasma treatment received by moderate cases **did not** lead to reduction in progression to severe disease/mortality.

**AllIMS New Delhi had earlier recommended** for selective consideration of Convalescent Plasma treatment only for severe category patients when following criteria are met:

(a) Early moderate disease (preferably within 7 days of symptoms onset, no use after 7 days)

(b) Availability of high titre donor plasma (Signal to cut off ratio >3.5 or equivalent depending on the test kit being used)

However, these recommendations have been withdrawn/discontinued **wef 19 May 2021**.
References.


3. https://www.mohfw.gov.in/pdf/AIIMSeICUsFAQs01SEP.pdf


Disclaimer. The information provided is intended only for educational purposes for intra Navy service personnel & their families, and is based on the currently available scientific evidence. It should not be quoted out of context.
1. **What is Remdisivir and how does it work?**

Remdisivir is an anti-viral drug which was developed in 2014 by Gilead Sciences Ltd for targeting Hepatitis C. It is deemed to reduce the SARS-CoV-2 replication in the COVID-19 infected person. It has been permitted by Govt of India as Emergency Use Authorisation (EUA)/ Off Label Use in treatment against COVID-19.

2. **Is Remdisivir useful in treatment of COVID-19?**

Two large clinical trials have been conducted to ascertain the efficacy of the drug. The Solidarity Drug Trial results released in Oct 20 showed that there was little or no effect of Remdisivir on decrease of mortality, need for ventilator and duration of hospital stay. Thereafter, the World Health Organisation had issued guidelines against use of Remdesivir.

Meanwhile, the National Institute of Health (USA) Adaptive COVID-19 Treatment Trial (ACTT) results published in New England Journal of Medicine in Oct 20 found that hospitalized patients with advanced COVID-19 and lung involvement who received Remdesivir had faster recovery time (11 vs 15 days) than those who received placebo. It however did not reduce overall mortality. But patients requiring oxygen supplementation (not on ventilator) had a mortality benefit (4% mortality in Remdesivir group compared to 13% in group without Remdesivir).

Based on the above scientific evidence, it is concluded that Remdesivir is not a magic drug which cures COVID-19 infection. MoHFW/ICMR guidelines have acknowledged it’s limited role in treatment by reducing days of hospitalisation. In addition, Remdesivir should be administered with other drugs like steroids, blood thinner, oxygen and vitamin supplements.

3. **Who should be treated with Remdisivir?**

As per present evidence and considering the recommendations from CDC and MoHFW/ICMR, Remdesivir should only be used for treatment of COVID-19 patients who are hospitalized and on Oxygen support (Moderate and Severe disease).

4. **Who should not be treated with Remdisivir?**

The drug should not be used in asymptomatic, and mild symptomatic cases that is persons who are not hospitalized or not on Oxygen support. The drug is contraindicated
in pregnancy, breastfeeding mothers and in children below the age of 12 years. The drug is also not recommended for use in patients with severe renal impairment and high level of liver enzymes.

5. **When should Remdisivir be used in treatment of COVID-19?**

An important protocol in use of Remdesivir is the timing of the drug. It should be *used early in the illness (less than 10 days) in person who require supplemental oxygen.*

6. **For how long is treatment with Remdesivir given?**

As per the latest guidelines by MoH&FW, the drug is given by the intravenous route for a duration of five days.

**References.**


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FAQ # 10 (24 May 2021): USE OF 2 DEOXY-D-GLUCOSE IN COVID-19 TREATMENT

1. **What is 2-Deoxy-D-Glucose (2-DG) and how does it work?**

2-Deoxy-D-Glucose has traditionally been used in cancer treatment as an adjunct and published reports of its limited efficacy in treating patients in non-hospital settings are available. It competes with glucose and inhibits glycolysis (process by which cells break down glucose for release of energy) in cells. Hence, cells with higher glucose consumption like cancer cell have also a higher uptake 2-DG resulting in diminished growth of these cancer cells.

2. **In that case, would the drug ‘2-DG’ work in COVID-19?**

As glucose is also required in higher quantities by the cells in which SARS-CoV-2 has invaded for replication, these cells also have a higher uptake 2-DG. Deprivation of energy in these cells and disrupting cell functioning is deemed to reduce the viral replication, thereby reducing the viral load. All this said, the drug ideally needs to be tested in large scale phase III clinical trials with scientific rigour, and the methods of study/ results also need to be peer reviewed (reviewed by the scientific community).

3. **Has any new clinical evidence been generated for use of ‘2-DG’ in COVID 19?**

According to 08 May 21 release by Ministry of Defence, the drug was tested on 110 patients in Phase II trials (to find the side-effects/safety of the drug) in moderately ill patients of COVID-19. The Phase III trials (to find the efficacy of the drug) was conducted on 220 patients between Nov 20 to Mar 21 at 27 COVID hospitals across India. The study subjects were chosen so as to exclude Diabetics, person with Coronary Artery Diseases, Chronic Obstructive Lung Diseases, Chronic Kidney diseases. Hence, the trial results do not apply to COVID patients with co-morbidities. The results of the trial indicated early relief from oxygen therapy/ dependence with 42% patients who received 2-DG showing symptomatic improvement by third day as compared to 31% of those who received standard of care. However, the details of the study including the study protocol has not been made public till now, hence, scientific scrutiny of the same is not possible presently. Institute of Nuclear Medicine and Allied Sciences (INMAS), which is a Defence Research and Development Organisation (DRDO) institute has stated that the drug was not evaluated in the acute treatment of moderate to severe COVID-19.
4. Is there any published clinical evidence/data to prove effectiveness of ‘2-DG’ in treatment of COVID-19?

One scientific study done in Mar 20 by a team from Patanjali Research Institute, Haridwar and Saveetha Institute of Medical and Technical Sciences, Chennai is the only available scientific evidence presently available in public domain on efficacy of ‘2- DG’ in treatment of COVID-19. It is a non-peer reviewed paper and available in pre-print form on ResearchGate platform. Hence, the experts are pointing out the paucity of data and ambiguity of study protocol.

5. Has 2-DG been launched for treatment of COVID-19 in India?

The drug ‘2-DG’ has been cleared for Emergency Use Authorisation (EUA)/ Off Label Use in India by the Drug Controller General of India as on 01 May 21. It is being developed as a joint venture by INMAS, DRDO and Dr Reddy’s Laboratories (DRL). Due to the novelty of 2-DG in non-surgical treatment of cancer, INMAS had transferred the technology for this molecule to DRL in 2014. The drug has not been launched in market as of yet.

6. Is ‘2-DG’ a safe drug? Does it have side-effects?

Hypoglycemia and sedation are known side effects of 2-DG. At higher doses cardiac effects like prolongation of QT interval (ECG abnormality) and certain neurological effects are documented.

7. What is the dosage schedule of ‘2-DG’?

Not much is known now. However as per initial information, the drug is to be taken orally mixed in water. It has a two dose schedule with one sachet given after overnight fast in morning and the second sachet in after three hours of fast. The proposed dosage schedule is for 05-07 days.

8. Is consent of patient required before administering 2-DG?

Informed consent may be required, as the drug is still under EUA, and no published data is available. However, guidelines regarding prescription/consumption of the medicine are awaited.

References

2. Press Release, GoI. DGCI approves anti-COVID drug developed by DRDO for emergency use. 08 May 21. Available at https://pib.gov.in

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