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Time in  
Bangladesh

January - May 2022  
Volume 9 Number 19

**BESTCEF**  
Cefixime trihydrate

# INTERN

A Unique Newsletter only for Intern Doctors

## Vision



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Our **Promise** is "To Build Family & Society in all over **Bangladesh**  
without COVID-19 by 100% Effective Prevention"



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## Dear Intern Doctors



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Welcome to the 19<sup>th</sup> Issue of "Intern Vision"

First of all we would like to give special thanks to all of our valued readers for mass participation & suggestions in the previous issue of Intern Vision. In every issue we strongly try to review this news letter according to your valuable opinion.

In this issue we have highlighted the features of "COVID-19" NOW A GLOBAL PANDEMIC as cover article which is very important for a medical professional and information about **MRCP (UK)** course which may help for build-up your post graduation career.

We have also focused on Practical procedure about 'Knee Joint Aspiration & Injection' which is very much important for an intern doctor of his/her day to day activities at hospital and **BCS Guide line** which are very important for a medical professional.

Our regular features (Medi Quiz, Puzzle Game & Thing A Little) are in this issue as usual.

Every cordial effort has been made to make this issue interesting & helpful to you.

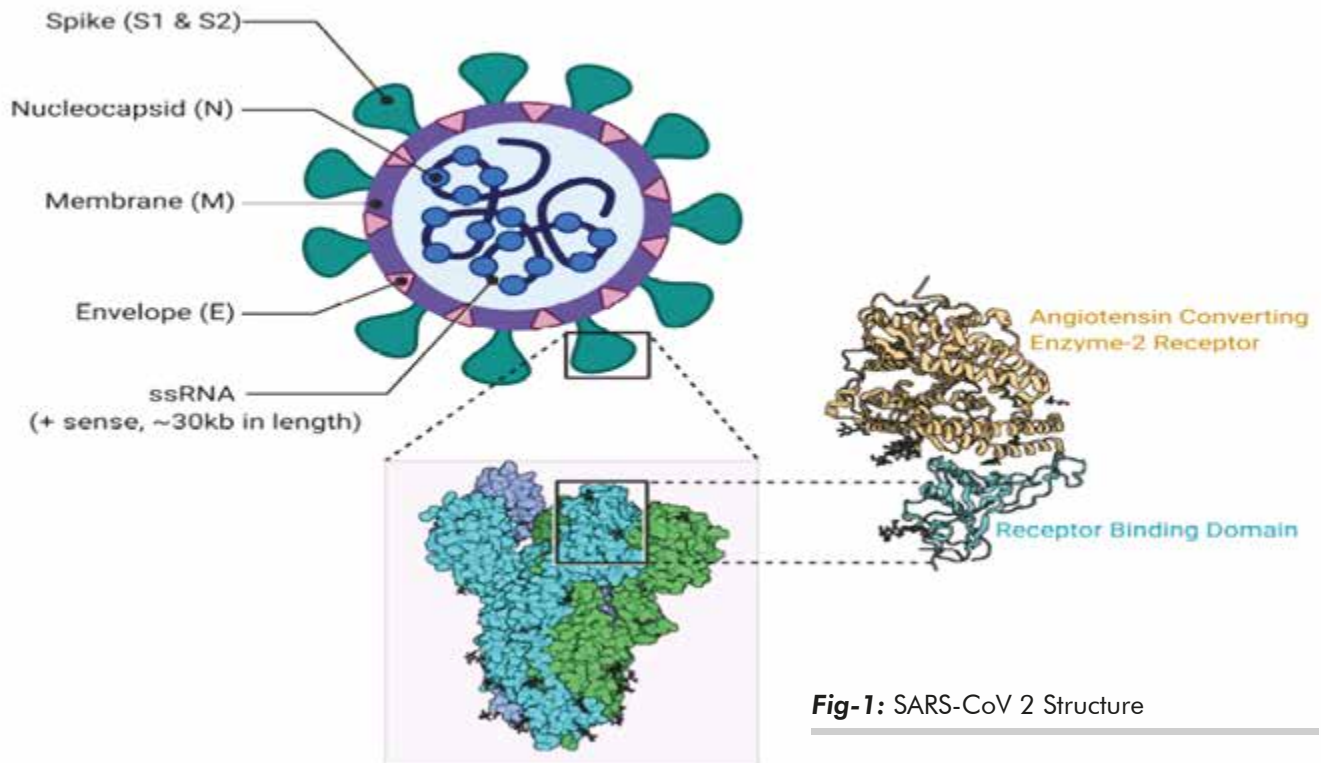
We sincerely expect your valuable suggestions for further excellence of

**INTERN**Vision

With regards,

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## “COVID-19” NOW A GLOBAL PANDEMIC



**Fig-1: SARS-CoV 2 Structure**

**COVID-19** is a disease caused by a new strain of coronavirus. 'CO' stands for corona, 'VI' for virus, and 'D' for disease. Coronaviruses (CoVs) are positive-stranded RNA(+ssRNA) viruses with a crown-like appearance under an electron microscope (corona is the Latin term for crown) due to the presence of spike glycoproteins on the envelope. Coronavirus disease 2019 (COVID-19), the highly contagious viral illness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has had a catastrophic effect on the world's demographics resulting in more than 4.98 million deaths worldwide, emerging as the most consequential global health crisis since the era of the influenza pandemic of 1918. After the first cases of this predominantly respiratory viral illness were first reported in Wuhan, Hubei Province, China, in late December 2019, SARS-CoV-2 rapidly disseminated across the world in a short span of time, compelling the World Health Organization (WHO) to declare it as a global pandemic on March 11, 2020. Since being declared a global pandemic, COVID-19 has ravaged many countries worldwide and has overwhelmed many healthcare systems. 'The pandemic has also

resulted in the loss of livelihoods due to prolonged shutdowns, which have had a rippling effect on the global economy. Even though substantial progress in clinical research has led to a better understanding of SARS-CoV-2 and the management of COVID-19, limiting the continuing spread of this virus and its variants has become an issue of increasing concern, as SARS-CoV-2 continues to wreak havoc across the world, with many countries enduring a second or third wave of outbreaks of this viral illness attributed mainly due to the emergence of mutant variants of the virus.

### Epidemiology<sup>1</sup>

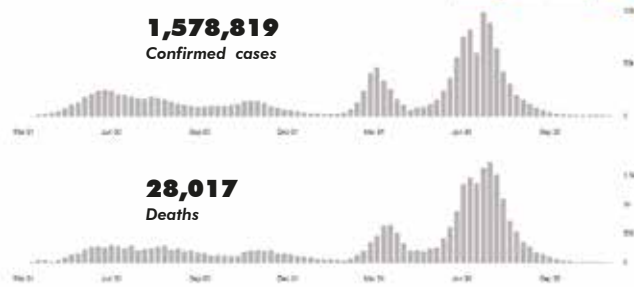
According to the World Health Organization (WHO), the emergence of viral diseases represents a serious public health risk. In the past two decades, several epidemics caused by viruses such as the severe acute respiratory syndrome coronavirus (SARS-CoV) from 2002 to 2003, and H1N1 influenza in 2009, and the Middle East respiratory syndrome coronavirus (MERS-CoV) in 2012 which have had a significant impact on global health. The U.S. experienced the highest number of SARS-CoV-2 infections and

COVID-19 related deaths followed by Brazil and India. In fact, COVID-19 was the third leading cause of death in the U.S. in 2020 after heart disease and cancer, with approximately 375,000 death reported. As of 22 June 2021, the Alpha(B.1.1.7) variant has spread to 170 countries, the Beta (B.1.351) variant has been reported in 119 countries, the Gamma (P.1) variant has been detected in 71 countries and the Delta variant(B.1.617.2) has spread to 85 countries around the world based on the weekly epidemiological update by the WHO. On November 24, 2021, South Africa reported the identification of a new SARS-CoV-2 variant, B.1.1.529, to the World Health Organization (WHO). B.1.1.529 was first detected in specimens collected on November 11, 2021 in Botswana and on November 14, 2021 in South Africa<sup>8</sup>.

### Scenario in Bangladesh <sup>2</sup>

In Bangladesh, from 3 January 2020 to 4:48pm CET, 10 December 2021, there have been 1,578,819 confirmed cases of COVID-19 with 28,017 deaths, reported to WHO. As of 6 December 2021, a total of 105,277,826 vaccine doses have been administered.

### Bangladesh Situation

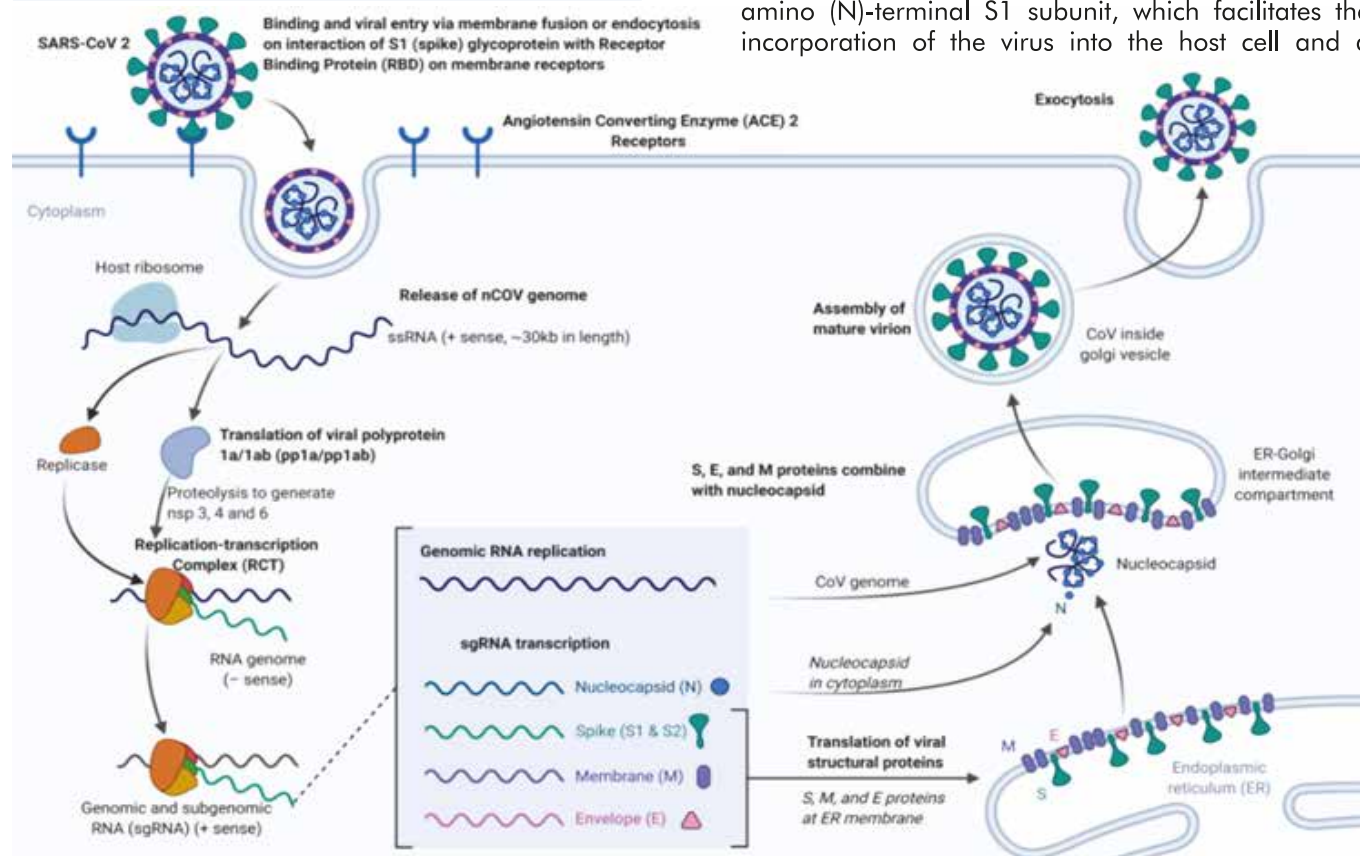


Source: world health organization; Data may be incomplete for the current Dec 31 day or week.

**Figure-2:** COVID 19 Scenarios in Bangladesh from 3 January 2020 to 10 December 2021.

### Pathogenesis of SARS-CoV-2

Structurally and phylogenetically, SARS-CoV-2 is similar to SARS-CoV and MERS-CoV and is composed of four main structural proteins: spike (S), envelope (E) glycoprotein, nucleocapsid (N), membrane (M) protein, along with 16 nonstructural proteins, and 5-8 accessory proteins. The surface spike (S) glycoprotein, which resembles a crown, is located on the outer surface of the virion and undergoes cleavage into an amino (N)-terminal S1 subunit, which facilitates the incorporation of the virus into the host cell and a



**Figure-3:** Covid 19, Corona Replication. Contributed by Rohan Bir Singh, MD.

carboxyl (C)-terminal S2 subunit containing a fusion peptide, a transmembrane domain, and cytoplasmic domain is responsible for virus-cell membrane fusion. The S1 subunit is further divided into a receptor-binding domain (RBD) and N-terminal domain (NTD), which facilitates viral entry into the host cell and serves as a potential target for neutralization in response to antisera or vaccines. The RBD is a fundamental peptide domain in the pathogenesis of infection as it represents a binding site for the human angiotensin-converting enzyme 2 (ACE2) receptors.

SARS-CoV-2 gains entry into the hosts' cells by binding the SARS-CoV-2 spike or S protein (S1) to the ACE2 receptors abundantly on respiratory epithelium such as type II alveolar epithelial cells. Besides the respiratory epithelium, ACE2 receptors are also expressed by other organs such as the upper esophagus, enterocytes from the ileum, myocardial cells, proximal tubular cells of the kidney, and urothelial cells of the bladder. The viral attachment process is followed by priming the spike protein S2 subunit by the host transmembrane serine protease 2 (TMPRSS2) that facilitates cell entry and subsequent viral replication endocytosis with the assembly of virions.

### Transmission Dynamics of SARS-CoV-2<sup>3</sup>

Transmission Dynamics of SARS-CoV-2 Human CoVs are transmitted primarily through respiratory droplets, but aerosol, direct contact with contaminated surfaces,

and fecal-oral transmission were also reported during the SARS epidemic. Early reports of patients with cough, lung ground glass opacities, and symptom progression to severe pneumonia, suggested communicability of SARS-CoV-2 via the respiratory route (Figure 4). Direct transmission by respiratory droplets is reinforced by productive SARS-CoV-2 replication in both the URT and lower respiratory tract (LRT), and the increasing number of reports indicating human-to-human spread among close contacts exhibiting active coughing (Figure 4). Aerosol transmission (spread >1 m) was implicated in the Amoy Gardens outbreak during the SARS epidemic, but the inconsistency of these findings in other settings suggested that SARS-CoV was an opportunistic airborne infection.

The ongoing COVID-19 pandemic has resulted in numerous accounts of different transmission routes between humans. Droplet transmission (>5  $\mu\text{m}$ ) is the most pronounced and heavily implicated mode of transmission reported during the pandemic. Direct contact spread from one infected individual to a second, naïve person has also been considered a driver of human-to-human transmission, especially in households with close interactions between family members. Both airborne and fecal-oral human-to-human transmission events were reported in the precursor SARS-CoV epidemic. Solid arrows show confirmed viral transfer from one infected person to another, with a declining gradient in arrow width denoting the relative contributions of each transmission route. Dashed lines show the plausibility of transmission types that have yet to be confirmed. SARS-CoV-2 symbol in 'infected patient' indicates where RNA/infectious virus has been detected. Figure generated with BioRender.

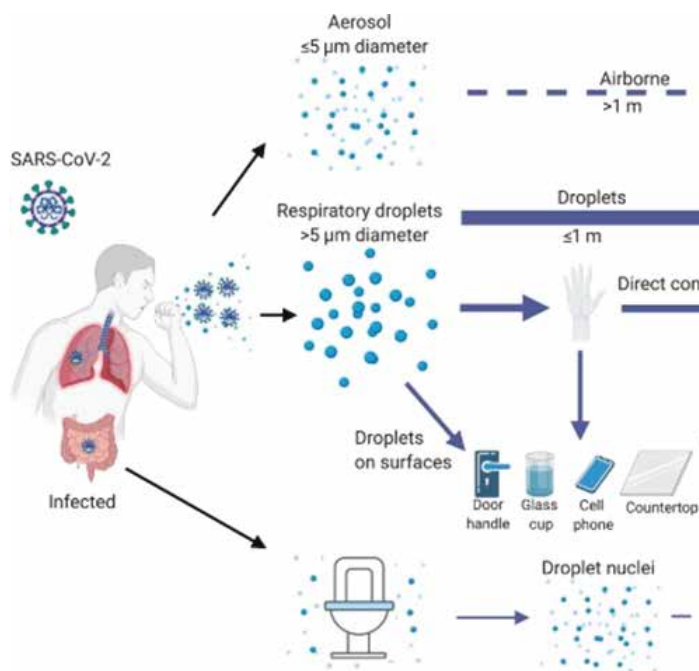
### Incubation Period of 5.2 Days on Average<sup>4</sup>

A Chinese study published in the New England Journal of Medicine on Jan. 30, has found the incubation period to be **5.2 days on average**, but it varies greatly among patients. The Chinese team conducting the study said their findings support a **14-day medical observation period** for people exposed to the pathogen.

**The mean incubation period was 5.2 days (95% confidence interval [CI], 4.1 to 7.0), with the 95th percentile of the distribution at 12.5 days** (highlight added by Worldometer).

### Single Virus Targeting Multiple Organs<sup>5</sup>

The receptor-binding domain (RBD) present within the S-glycoprotein is essential for binding to host angiotensin-converting enzyme 2 (ACE2) which serves as a receptor for viral entry. The RBD of SARS-CoV-2



**Figure-4:** Proposed Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Transmission Routes.

has greater affinity for ACE2 than SARS-CoV. The presence of ACE2 throughout the human body marks tissues vulnerable to the virus. The receptor is present in the brain, liver, spleen, kidney, bone marrow, thymus, nasopharynx, oral, and nasal mucosa, lung, small intestine, stomach, colon, lymph nodes, skin, arteries, and veins.

Cytokine storm is the flaring-out-of-control inflammatory response of the immune system mediated by excessive production of pro-inflammatory cytokines. The major types of cytokines include interferons, interleukins, chemokines, colony-stimulating factors, and tumor necrosis factor. They are involved in the initiation, amplification, and regulation of adaptive immunity. The damage-associated molecular patterns are recognized by epithelial cells, endothelial cells, and alveolar macrophages which start releasing cytokines like IL-6 and IP-10. T-cells, monocytes, and macrophages migrate to the site of infection and help in the clearance of infected cells.

The nasal and throat epithelial cells serve as safe havens for the virus due to the high expression of ACE2 in these cells. The virus starts multiplying in these cells and, if not neutralized by the immune system, is shed in large quantity, which leads to spread to other individuals. The next target of the virus are the lungs which are also rich in ACE2 receptors. Type-II pneumocytes are involved in the production of alveolar surfactant, which reduces the surface tension of alveoli and airway walls preventing their collapse and allowing O<sub>2</sub>/CO<sub>2</sub> exchange. Virus entry into these cells affects their normal physiology and associated processes, which may lead to lung collapse. In the meantime, the host cells recognize the virus/viral proteins as foreign antigens and lymphocytes start producing immunoglobulin M (IgM), IgA, and IgG. The dead cells and fluid left behind due to the exaggerated immune response choke the alveoli and airways, thus hampering O<sub>2</sub>/CO<sub>2</sub> exchange and development of pneumonia.

Kidneys are another target for SARS-CoV-2 due to the presence of ACE2 receptors in the proximal tubules and glomeruli. Proteinuria, hematuria, and elevated blood urea nitrogen and creatinine are a common

observation in COVID-19 patients. Plasma proteins are absorbed in the proximal tubules, and injury to these tubules results in increased protein excretion in urine. Hematuria can be caused by glomerular barrier disruption. SARS-CoV-2 RNA has been detected in urine samples by RT-PCR, and fully assembled viruses have been observed by transmission electron microscopy.

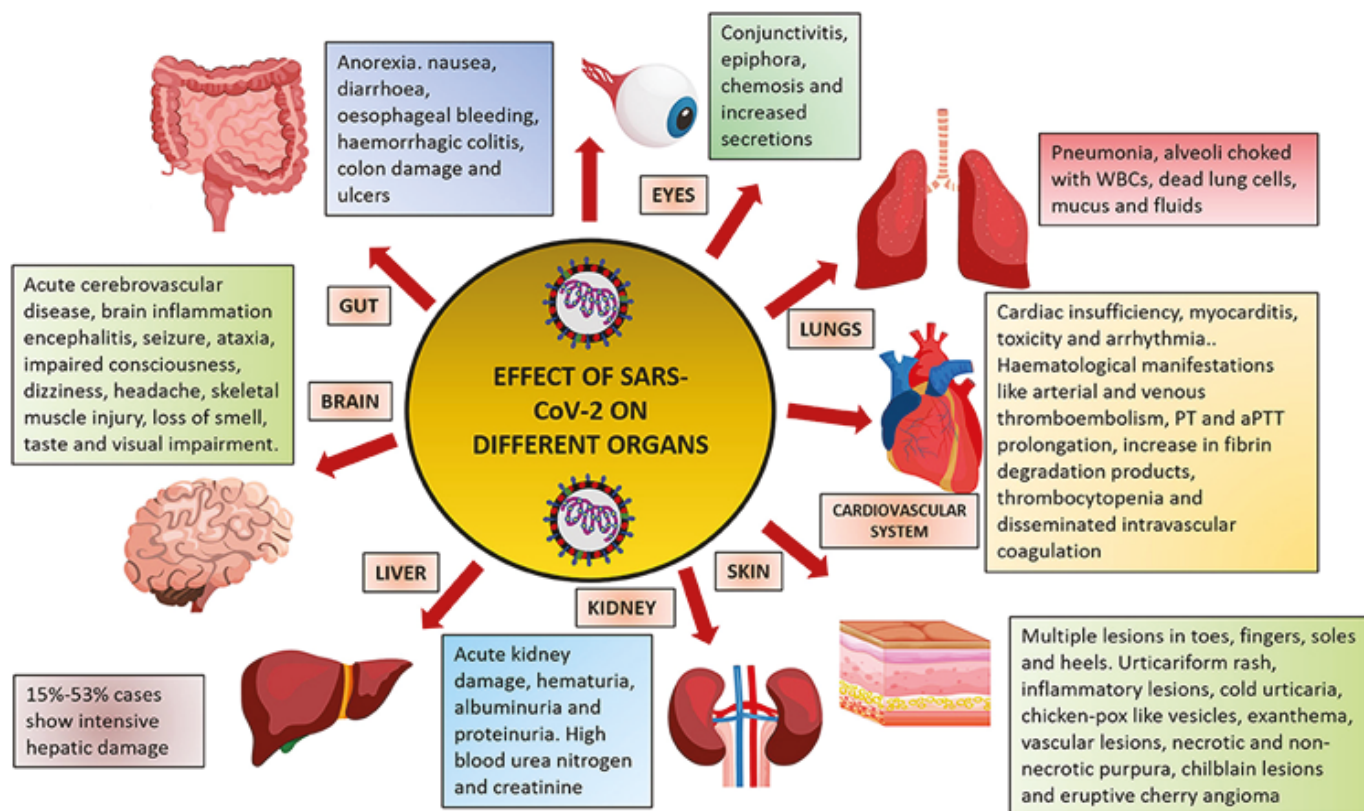
Heart and blood vessels are the other hotspots of the ACE2 receptor, thus being prone to SARS-CoV-2. The cardiovascular system is closely monitored in COVID-19 patients and special attention must be provided for its protection. The major risk associated with thromboembolism is that blood clots may reach the lungs, brain, and heart and cause pulmonary embolism, stroke, and cardiac arrest, respectively.

A report suggests that out of 95 patients positive for COVID-19 from Sun Yat-sen University Hospital in China, 58 cases had gastrointestinal (GI) symptoms. Anorexia, Diarrhea, and nausea were the main symptoms among the patients, and esophageal bleeding and ulcers were reported from a patient with severe illness.

The symptoms were very diverse and ranged from acute cerebrovascular disease, to seizure, to ataxia, to impaired consciousness, to dizziness, to headache, and to skeletal muscle injury. Loss of smell and taste and visual impairment were also the effects caused by the virus on the peripheral nervous system. The olfactory epithelium lies in the nasal cavity and is a site for viral replication and possible entry site to the brain. The central and peripheral nervous systems are also very rich in ACE2 abundance, making them susceptible to SARS-CoV-2 infection.

Abnormal alanine transaminase (ALT) and aspartate aminotransferase (AST) levels are an indication of liver damage. Liver damage has been observed in about 15–53% of the cases with elevated bilirubin, AST, and ALT. Mild lobular and portal damage and microvascular steatosis have been observed in liver biopsies of COVID-19 deceased patients.

The occurrence of conjunctivitis has also been reported as a clinical manifestation of the infection and tears, and conjunctival fluids have tested positive for the virus in such cases.



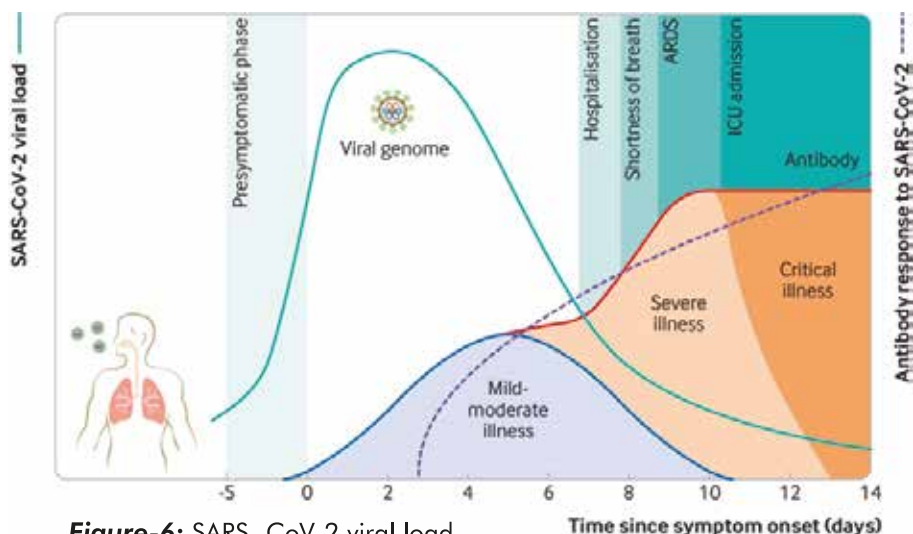
**Figure-5:** Effect of SARS-CoV-2 infection on different organs of the human body.

### Effect on the Skin

Some clinical manifestations have also been observed in the skin, hands, and toes 3–4 weeks after COVID-19 infection.

### Viral load dynamics and duration of infectiousness

In the respiratory tract, peak SARS-CoV-2 load is observed at the time of symptom onset or in the first week of illness with subsequent decline thereafter, which indicates the highest infectiousness potential just before or within the first five days of symptom onset (fig 6). After the initial exposure, patients typically develop symptoms within 5–6 days (incubation period). SARS-CoV-2 generates a diverse range



**Figure-6:** SARS- CoV-2 viral load.

of clinical manifestations, ranging from mild infection to severe disease accompanied by high mortality. In patients with mild infection, initial host immune response is capable of controlling the infection. In severe disease, excessive immune response leads to organ damage, intensive care admission, or death. The viral load peaks in the first week of infection, declines thereafter gradually, while the antibody response gradually increases and is often detectable by day 14 (figure adapted with permission from doi:10.1016/j. cell.2020.04.013; doi:10.1016/S2213-2600(20)30230-7).

### Radiological Aspects of COVID-19

Radiological imaging is important for the diagnosis and assessment of disease progression. Just like other pneumonias caused by other coronaviruses, asymmetric, and diffuse airspace opacities have been observed in patients. Transverse chest CT-scan images have revealed bilateral ground glass opacities and areas with sub-segmental consolidation. Certain other features like round opacities, crazy paving, and reticulation along with peripheral opacities are also common findings in chest CT scans.

### National Guidelines on Clinical Management of COVID-19: 7

Table-I: Classification

| Asymptomatic                            | No symptoms but test positive                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mild case: Influenza Like illness (ILI) | <p>The clinical symptoms are mild, and there is no evidence of pneumonia.</p> <p><b>Symptoms may be:</b></p> <ul style="list-style-type: none"> <li>• Fever • Cough • Loss of taste or smell • Myalgia</li> <li>• Fatigue • Anorexia • Headache</li> <li>• Ageusia • Diarrhoea • Vomiting</li> <li>• Rhinorrhoea • Sore throat</li> <li>• Red eye • Abdominal pain</li> <li>• Skin lesion (chilblain, nodule) etc.</li> </ul>                                                                                                                                                                                                                                                                                                            |
| Moderate case (Pneumonia)               | <ul style="list-style-type: none"> <li>• Adolescent or adult with clinical signs of pneumonia (fever, cough, dyspnoea, fast breathing) but no signs of severe pneumonia (<math>SpO_2 \geq 90\%</math> on room air).</li> <li>• Child with clinical signs of non-severe pneumonia (cough or difficulty breathing + fast breathing and/or chest indrawing) and no signs of severe pneumonia. Fast breathing (in breaths/min): &lt; 2 months: <math>\geq 60</math>; 2–11 months: <math>\geq 50</math>; 1–5 years: <math>\geq 40</math>.</li> <li>• While the diagnosis can be made on clinical grounds, chest imaging (radiograph, CT scan, ultrasound) may assist in diagnosis and identify or exclude pulmonary complications.</li> </ul> |
| Severe case (Severe Pneumonia)          | <p>Adolescent or adult with clinical signs of pneumonia (fever, cough, dyspnoea, fast breathing) plus one of the following: severe respiratory distress, respiratory rate <math>&gt;30</math> breaths/min or <math>SpO_2 &lt; 90\%</math> on room air.</p> <p>Child with clinical signs of pneumonia (cough or difficulty in breathing) + at least one of the following:</p>                                                                                                                                                                                                                                                                                                                                                             |

### Asymptomatic

### No symptoms but test positive

#### Severe case (Severe Pneumonia)

- Central cyanosis or  $SpO_2 < 90\%$ ; severe respiratory distress (e.g., fast breathing, grunting, very severe chest indrawing); general danger sign: inability to breastfeed or drink, lethargy or unconsciousness, or convulsions.
- Fast breathing (in breaths/ min):  
< 2 months:  $\geq 60$ ;  
2–11 months:  $\geq 50$ ; 1–5 years:  $\geq 40$ .

#### Critical cases (Cases requiring ICU care)

- Severe COVID-19 case meeting any of the following criteria:**
- Respiratory failure and requiring mechanical ventilation • Sepsis • Septic shock • ARDS • Any organ failure that requires ICU care.

**N.B:** Pregnant women with COVID-19 should be considered as a severe case if the saturation level is below 94%.

### Risk factors for severe COVID-19

- DM • HTN • High risk Pregnancy • CKD • Asthma
- COPD • Obesity • Malignancy • CLD • IHD • Heart Failure • Dementia • Mental disorder • Stroke • On steroids

### Admission Criteria

- All suspected/ confirmed cases of COVID-19 presenting as**
- **Moderate case-** clinical or radiological evidence of pneumonia
  - **Severe Pneumonia-** clinical or radiological evidence of pneumonia with signs of severe pneumonia ( $RR > 30$  /min or oxygen saturation  $< 90\%$ )
  - **Critical COVID-19:** ARDS, Sepsis, Septic shock
  - **Hypoxia ( $SpO_2 \leq 93\%$ )** even in the absence of any clinical signs
  - Patient with multiple uncontrolled comorbidities or prothrombotic state such as high-risk pregnancy, active malignancy, DVT irrespective of severity etc.

### Clinical Management

Supportive care + Isolation protocol (either home or institutional depending on national strategy).

### Advice for cases in home isolation

- Rest at home in self-isolation. If self-isolation at home is not possible because of lack of care giver, overcrowding at home or for any other cause, patient should be brought to the hospital for institutional isolation in a designated area.
- Physical distancing with family members. If possible, remain in a separate single room.
- No visitor.
- Regular Hand Wash (20 seconds each time)
- Cough etiquette: use tissue paper or elbow followed by hand wash.
- Medical mask (both patient and caregiver).

• **Mild case without comorbidities-** Only symptomatic management and home isolation in a single room. (above mentioned home isolation protocol should be strictly followed).

• **Mild case with controlled comorbidities-** such as DM, HTN, IHD, Asthma/COPD/ILD, CKD, CLD, Malignancy, Pregnancy, Obesity can be managed at home. However, patient should be carefully monitored at home with finger pulse oximetry and be watchful about danger signs.

• **Mild case with multiple uncontrolled comorbid conditions such as HTN, DM, IHD, CKD, CLD, COPD/Asthma/ILD and prothrombotic state** such as high risk-pregnancy and active malignancy etc. should receive thromboprophylaxis along with symptomatic management and should be admitted.

• **For fever:** Tab Paracetamol (500mg) 1-2 tablet 3-4 times daily.

• **For Rhinorrhea:** Antihistamine.

• **For cough:** Antitussive for dry cough, inhaled budesonide 200mcg 2 puff 12 hourly.

• **Thromboprophylaxis:** The thromboprophylaxis is not routinely indicated for mild cases except for Mild COVID 19 cases with multiple uncontrolled comorbidities and prothrombotic conditions: Enoxaparin 40 mg, SC, once daily (OD) [for obese patients (BMI>40), 40 mg BID]. When CrCl<30ml/min: Enoxaparin 20 mg SC OD for both obese and non-obese patient or Unfractionated Heparin 5000 unit SC/BD.

• **Monitor oxygen saturation at rest and minimum exertion such as walking for 3-6 minutes.**

• **Look for any danger signs of COVID as for example-** Breathing difficulties, chest pain, light headedness, disorientation, extreme weakness which results in even difficulties in walking and drop in oxygen saturation to or  $\leq 93\%$  etc.

• **Investigations:** No routine investigations are required for mild cases.

**N.B:** There is no role of systemic steroid in mild cases. Rather it may be harmful if given during the viremic phase of the disease especially in the first 7 days.

• Symptomatic management as like as mild case

• Oxygen through nasal cannula (Maximum 5 L/min) if required. Target  $\text{SPO}_2$  is 94% during initial resuscitation and 90% for stable patients. For pregnant patients and patients with other organ failure target  $\text{SPO}_2$  is 94%

• **Prone position-** Maintain prone position for a total of 4-6 hours/day (divided in shorter period over the day)

• **Thromboprophylaxis:** LMWH (Enoxaparin) at standard dose of 40 mg SC OD, For obese patients (BMI >40) LMWH, 40 mg SC BD, If CrCl < 30 reduce the dose

to 20 mg SC OD (both for obese and non-obese patient)

• If LMWH cannot be given or contraindicated, use unfractionated heparin (UFH). Dose of unfractionated heparin: 5000unit SC BD

• Thromboprophylaxis should be given till discharge or for 7 days whichever is longer and followed by Tab. Rivaroxaban 10 mg once daily Or Tab Apixaban 2.5 mg twice daily for 1 month (especially patients at high risk for thromboembolism and based on clinician's discretion)

• **Antiviral:** Remdesivir should be used within 10 days of symptom onset and at the discretion of consultant working in the hospital in all hospitalized adult and pediatric patients (>12 years old) with suspected or laboratory-confirmed COVID-19 case

— Who is hypoxic ( $\text{SPO}_2 \leq 93\%$ ) or

— Having increased breathing difficulties or

— Who needs oxygen

• **Steroid** should be given in patients having respiratory distress and becoming hypoxic  $\text{SPO}_2 \leq 93\%$ . Dosing: Dexamethasone (0.5 mg): 12 tablets daily for adults

• **Antibiotic:** there is no role of antibiotic in COVID-19 infection. Oral antibiotic such as Amoxicillin Clavulanic acid or Doxycycline may be given if bacterial infection is suspected.

• **Investigation:** CBC, CRP, D-dimer, S. LDH, S. ferritin, S. creatinine, ALT, CXR PA view/HRCT of chest or other markers as per treating clinician's decision.

• Symptomatic management for cough and fever described for mild cases

• **Oxygen therapy:** Escalate oxygen flow as per patient's  $\text{SPO}_2$  and degree of respiratory distress. Change of oxygen delivery device as required to maintain  $\text{SPO}_2$ : Nasal cannula (up to 5 litre), Oxygen mask (6-10 litre) and Non-Rebreather bag with reservoir bag (10-15 litre). We recommend immediate administration of supplemental oxygen to any patient with emergency signs during resuscitation to target  $\text{SPO}_2 \geq 94\%$  and to any patient without emergency signs and hypoxaemia (i.e. stable hypoxaemic patient) to target  $\text{SPO}_2 > 90\%$  or  $\geq 92-95\%$  in pregnant women.

• **Prone position-** Maintain awake prone position for a total of 4-6 hours/day or more (divided in shorter period over the day). Please avoid prone position if patient is severely dyspneic and if there is any contraindication. In this case try lateral and sitting position

• **Steroid-** Inj. Dexamethasone 6 mg once daily for 7 to 10 days

• **Maintain euvolemia**

- Avoid fluid overload
- Anticoagulation:
  - Initiate Thromboprophylaxis (LMWH) in standard doses of 1mg/kg/day and assess the bleeding risk
  - There is lack of high-quality evidence of therapeutic anticoagulation in severe cases. Consider therapeutic anticoagulation (1 mg/kg body weight 12 hourly) only if patient has proven thromboembolism and suspected thromboembolism
  - **Thromboprophylaxis should be given till discharge or for 7 days** whichever is longer and followed by Tab Rivaroxaban 10 mg once daily Or Tab Apixaban 2.5 mg twice daily for 1 month especially patients at high risk for thromboembolism and based on clinician's discretion
- **Antiviral:** Remdesivir should be used within 10 days of symptom onset and at the discretion of consultant working in the hospital in all hospitalized adult and pediatric patients (>12 years old) with suspected or laboratory-confirmed COVID-19 case
  - who is hypoxic ( $\text{SPO}_2 \leq 93\%$ ) or
  - having increased breathing difficulties or
  - who needs oxygen
- **Antibiotic**
  - IV broad spectrum antibiotic at the discretion of

consultant if bacterial infection is suspected

• **Investigation:** CBC, CRP, D-dimer, S. ferritin, S. creatinine, ALT, CXR P/A view or other labs or imaging as per treating clinician's decision. HRCT of chest should not be routinely advised. It can only help in diagnostic dilemma. There is no role HRCT scan of chest in the management of COVID-19.

### References:

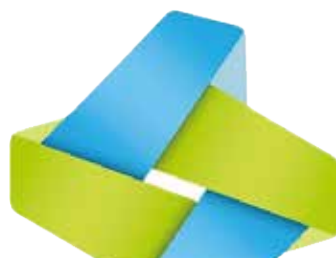
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## Biopharma was awarded “Golden Europe Award for Quality”

by Global Trade Leader's Club in Paris, France in 2018 in recognition of its commitment to Quality and Excellence in its Services.





## MRCP UK



Dear Intern Doctors,

Congratulations! You have completed your MBBS course; it is the high time to prepare yourselves for further study. You know MRCP (UK) is a well-recognized medical degree all over the world. So, you can take an effort to prepare yourselves for MRCP Part 1. Biopharma Limited wants to be a proud partner in your effort. We will publish detailed information about MRCP part by part.

Wishing all of you a safe, healthy and peaceful life.

### INTRODUCTION

The MRCP(UK) Diploma and Specialty Certificate Examinations are designed to test the skills, knowledge and behaviour of doctors in training. It has three parts:

- MRCP(UK) Part 1
- MRCP(UK) Part 2 Written
- MRCP(UK) Part 2 Clinical (PACES)

### Part 1

The MRCP(UK) Part 1 is the entry-level exam accessible to doctors with a minimum of 12 months' postgraduate experience in medical employment. It covers a broad range of topics to ensure the level of knowledge is appropriate to physicians at the beginning of postgraduate training.

MRCP(UK) tests the acquisition of a representative sample of medical knowledge, skills and behaviour as specified in the UK Specialty Training Curriculum for Core Medical Training Link (<https://www.mrcpuk.org/>)

[sites/default/files/documents/2009-CMT-Curriculum-\(Amended%20Aug%202013\).pdf/](#) Internal Medicine Training. Part 1 is the first component of a sequence of assessments intended to match the progression of trainees undertaking the Core Medical Training/ Internal Medical Training programme in the UK, adding unique information and building on previous assessments.

### Knowledge as an essential base for the practice of clinical reasoning

Knowledge is vital as a basis for learning during postgraduate training, to develop understanding of disease processes and their treatment. Building on knowledge of basic medical science gained in undergraduate education, the purpose of Part 1 is to test knowledge and understanding of common and important disorders, as outlined in the UK curriculum, as well as clinical science.

Success in the Part 1 indicates you not only retained the knowledge acquired during undergraduate training, but that your knowledge of medicine has expanded and kept pace with developments that have occurred since graduation, and continues to provide an appropriate basis for clinical decision making. Part 1 is a valuable milestone during training, and helps to prepare you for the more challenging Part 2 Written and Clinical Examinations.

Clinical science forms the basis of all medical practice, and so it is an important component of the Part 1 exam. Wherever appropriate, clinical science questions will include a clinical stem, although this will not invariably be the case if such a stem would not be justified due to the nature of the question.

### The exam at a glance

- one-day exam
- two three-hour papers
- 100 multiple-choice (best of five) questions per paper
- no images
- sat in an exam hall or online

### Applications

How and when to apply :

- Dates and fees (<https://www.mrcpuk.org/mrcpuk-examinations/part-1/exam-dates-and-fees>)
- Online applications

### Exam dates and fees

- MRCP(UK) Part 1 dates and fees
- Applications made outside the opening and closing dates will not be accepted. All UK exams are online. The online exam is only available to UK-based candidates, international candidates in a Federation Training Programme, and trainees based in Malaysia.

### International centres ( For Bangladesh)

Bangladesh (Dhaka)

|                    | 2022/01            | 2022/02          | 2022/03         | 2022/04                       | Exam fee |
|--------------------|--------------------|------------------|-----------------|-------------------------------|----------|
| Application period | 6-13 December 2021 | 14-21 March 2022 | 20-27 June 2022 | 26 September - 3 October 2022 | £608     |
| Exam date          | 9 February 2022    | 18 May 2022      | 24 August 2022  | 30 November 2022              |          |

### How to complete your application

Find out how to apply online

To find out how to open a My MRCP(UK) online account watch video(Link- <https://www.youtube.com/watch?v=GZLOLmdYY2Q>).

### Main stages to applying:

1. Log into your My MRCP(UK) account (<https://www.mrcpuk.org/>)
2. Check that all your personal details are up-to-date. You will need to provide evidence of your primary medical qualification. Submit this to your administrative office following the instructions below.
3. Fill in details about whether you are training in the UK or not
4. Choose a centre where you would like to take the examination
5. Complete any special arrangements where applicable
6. Pay for the examination.

### Completing your application

When you apply for the Part 1 examination for the first time you will be required to submit evidence of your primary medical qualification. If your payment fails at the time of your application you will also need to provide payment by following the instructions below.

**NB:** Please note that copies of qualifications will only be accepted once a registration period is open and candidates have submitted an online application. Any qualifications sent before the relevant opening date will not be processed.

### Primary medical qualification

This evidence will take the form of an authenticated copy of your diploma of primary medical qualification

(PMQ). This document can be scanned and emailed to the Part 1 administration team.

Candidates with a UK General Medical Council provisional or full registration will need to submit their registration number at the time of application.

Candidates registered with the GMC do not need to provide a scanned copy of their qualification unless requested by MRCP(UK) central office.

### Submission of documentary evidence of primary medical qualification

Photocopies of certificates and/or official translations (in English)\* will be accepted only if they have been prepared and authenticated by one of the following:

- issuing University or Medical School
- a British Consulate or British Council outside the UK
- British Embassy
- British High Commission
- candidate's own Embassy
- High Commission in the UK
- a member of the Gardai in the Irish Republic
- Government Ministries of Health
- a notary public
- a Fellow or Member of the Royal Colleges of Physicians or a Chair of the Examining Board of the awarding body (verification of the Fellow or Member will be sought to ensure that they are affiliated with the issuing University/Medical School and the authenticated copy should be submitted with the authenticator's full name, their Royal Colleges of Physicians code and an accompanying official stamp or letter from that Fellow, Member or Chair).

\* Candidates must submit an authenticated translation if their primary medical degree certificate is not in English. A fresh ink stamp, in English, must be used to authenticate the copy or translation of the primary medical qualification.

Any stamps/signatures must be made on the front of the certificate and in English. If we are unable to clearly see who has attested the document, you will be asked to provide a new attestation stamp.

The Colleges reserve the right to request to see the original documents if there is any doubt as to the authenticity of the submitted copies of documents.

Scan and email your documents to the relevant administration office, using the following guidelines:

All candidates who register to take examinations should scan and send their documents to: [PMQ@mrcpuk.org](mailto:PMQ@mrcpuk.org)

1. The Subject Line of your email should contain 'Primary Medical Qualification' and your RCP code number

2. Attach scanned copies of your forms and documents. You can review the Help instructions of your email program to learn how to attach files.

o Images must be in PDF or JPEG file format and not password protected.

o The resolution must be good enough to clearly show all text, images, markings, and seals visible on the original physical document

o Be sure to include all pages of multi-page documents and both sides of double-sided documents

3. Emails should not be more than 2MB in size. If you have multiple forms and documents to send us, you should consider sending more than one email.

4. Zip files cannot be accepted.

5. If a scanned document image is not acceptable, you will be requested to submit a new, higher quality scanned image, or the original document by post.

Please note due to the large amount of primary medical qualifications received during an application period, it may take up to 4 weeks after the close of the application period to process your qualification.

### Payment of the examination fee

This guide will show you how to make multiple payment attempts.

How to pay online (Link- [https://www.mrcpuk.org/sites/default/files/documents/Multiple%20Payment%20Attempts%20Guide%20-%20FOR%20CANDIDATES%20\(2\).pdf](https://www.mrcpuk.org/sites/default/files/documents/Multiple%20Payment%20Attempts%20Guide%20-%20FOR%20CANDIDATES%20(2).pdf))

### Credit/debit card

You can opt to pay using the options below. If paying via a credit/debit card, you can now log back into your MyMRCP account at later date to make payment of the examination fee.

To make a payment over the phone you will need to provide the 16 digit card number, expiry date (month/year) and the 3 digit security code (on the back of the card). Payments will be processed using a secure payment system and card details will not be stored by MRCP(UK).

**NB:** Please note that in order to comply with UK law we cannot accept credit/debit card details sent in emails/via the contact form on this website, either in the body text or as attachments. If you do send card details in this manner it is entirely at your own risk. Card details received in emails or as attachments will be immediately deleted and payments will not be actioned. Card payment can only be made online via the application system or by telephone.

### Declaration form

Candidates with constraints on their practice should complete an online declaration form as soon as possible.

- Declaration form
- Regulations
- Candidates with constraints on their practice

### Candidates with constraints on their practice

Candidates who have been erased from the GMC (or equivalent) register for reasons related to fitness to practice are not permitted entry to any MRCP(UK) Examination. Candidates who have been suspended from the GMC (or equivalent) register are not permitted entry to any MRCP(UK) Examination for the duration of the suspension.

Candidates who are subject to any warning, interim orders, undertakings or conditions on their practice from the GMC (or equivalent body) must submit a completed MRCP(UK) and Specialty Certificate Examinations candidate declaration form (Link-<https://www.mrcpuk.org/declaration-form>) with each application.

Permission to enter any MRCP(UK) Examination will be at the discretion of the MRCP(UK) Medical Director.

This form must be completed electronically. Any candidate submitting an online application will be prompted to submit this form, should they declare any restriction as listed above.

## Medi Quiz (19<sup>th</sup> Issue)

1. "COVID -19", the recent global pandemic, is caused by coronavirus

as 'CO', 'VI' & 'D' COVID stands for

CO .....,

VI.....,

D.....

respectively.

2. Write National Guidelines on Clinical Management of COVID-19 according to Critical Cases (Cases requiring ICU care).

3. Write National Guidelines on Clinical Management of COVID-19 according to Clinical Management-D. Severe cases (Antiviral).

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**Medicine Today**

A Professional  
Medical Journal

**Published**

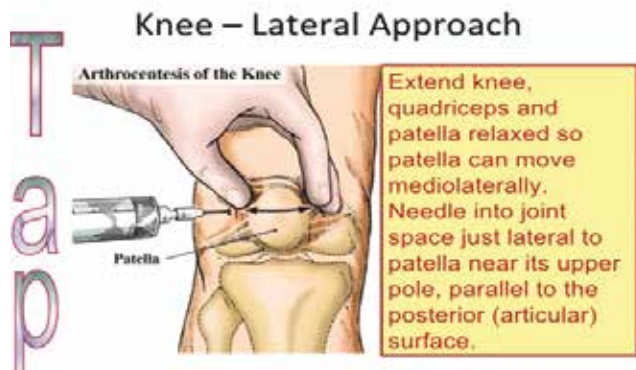
**2 times**

Enlisted in  
BanglaJOL/AsiaJOL  
Indexed in  
DOAJ, Google  
Scholar, Google.

Web Link: [www.banglajol.info/index.php/MEDTOADY](http://www.banglajol.info/index.php/MEDTOADY)

# Knee Joint Aspiration & Injection

Knee joint aspiration and injection are performed to aid in diagnosis and treatment of knee joint diseases.



### Common causes of knee joint aspiration and injection (Arthrocentesis):

Knee joint aspiration and injection are performed to establish a diagnosis, relieve discomfort, drain off infected fluid or instill medication. Because prompt treatment of a joint infection can preserve the joint integrity, any unexplained monoarthritis should be considered for arthrocentesis.

### Indication for Arthrocentesis:

- Crystal induced arthropathy
- Hemarthrosis.
- Limiting joint damage from an infectious process.
- Unexplained joint effusion.
- Unexplained monoarthritis.

### Contra-indication to Intra-articular Injection:

|                                        |                                                    |
|----------------------------------------|----------------------------------------------------|
| 1. Adjacent osteomyelitis              | 6. Joint prosthesis                                |
| 2. Bacteremia                          | 7. Osteochondral fracture                          |
| 3. Hemarthrosis                        | 8. Periarticular cellulitis                        |
| 4. Impending joint replacement surgery | 9. Poorly controlled diabetes mellitus             |
| 5. Infectious arthritis                | 10. Uncontrolled bleeding disorder or coagulopathy |

### Patient Preparation:

Clothing is removed from over the affected joint. The patient is placed in the supine position (some physicians prefer to have the knee bent to 90 degrees). An absorbent pad is placed beneath the knee.

### Equipment:

1. Sterile gloves.
2. Sterile fenestrated drape.
3. 2 10-ml syringe.
4. 2 21-gauge, 1-inch needles.

5. 1 inch of 4\*4 gauze soaked with povidone-iodine solution (Betadine).

6. Hemostat (for stabilizing the needle when exchanging the medication syringe for the aspiration syringe).

7. Sterile bandage.

### Procedure:

1. The patient is supine on the table with the knee extended and examined to determine the amount of joint fluid present.

2. The superior lateral aspect of the patella is palpated. The skin is marked with a pen, one fingerbreadth above and one fingerbreadth lateral to this site which provides direct access to the synovium.

3. The skin is washed and a 21-gauge and 1-inch needle is attached to a 5- to 20-ml syringe, depending on the anticipated amount of fluid present for removal.

4. The needle is inserted and directed at a 45-degree angle distally and 45-degrees into the knee, titled below the patella.

5. Once the needle has been inserted 1 to ¼ inches, aspiration performed and the syringe should fill with fluid.

6. Once the syringe has filled, a hemostat can be placed on the hub of the needle. With the needle stabilized with the hemostat, the syringe can be disconnected and fluid sent for study.

7. A syringe filled with corticosteroid medication can then be attached to the needle. For injection, use betamethasone 1 ml, mixed with 3-5 ml of 1% lidocaine can be used. After injection of the medication the needle and syringe are withdrawn.

8. The skin is cleaned and bandage is applied over the needle-punctured site. The patient is warned to avoid forceful activity on the joint while it is anesthetized.



### Complications which may occur:

1. Bacteremia.
2. Inaccessible joints.
3. Joint prosthesis.
4. Severe coagulopathy.
5. Uncooperative patient.



Dr. Lokiat Ullah received an Award on behalf of Biopharma Ltd for Quality products manufacturer; Title: "Golden Europe for Quality"



Dr Lokiat Ullah is talking to Dr Ahmed Tutungi an eminent scholar in social sciences at his Istanbul Office, Turkey. Dr Tutungi is co-founder of IIIT in USA



Colonel (Dr) Mohamed Zaki Mokhter, Commander of Malaysian Field Hospital of Cox's Bazar, Bangladesh (Malaysian Armed Forces) handed over the Crest to Dr. Lokiat Ullah for supporting them to render their services for ailed humanity among Rohingya



Dr Lokiat Ullah and his wife Dr Musfiqa Ashraf is with H.E. Tan Sri Mr Hamid Albar during his Dhaka visit, a veteran politician who was a Minister for quite long time in different Ministries like Defence, Home and Internal Security, Tourism & Hospitality, Prime Minister's Office and so on.



Hon'ble Executive Director, Dr. Lokiat Ullah handed over Biopharma's souvenir to H.E Dr. Zul kifli, Health Minister and Dr. Suhaini Kadiman, Chief Anaesthesiologist of National Cardiac Institute of Malaysia in Kuala Lumpur, Malaysia.



Dr. Lokiat Ullah is giving an interview of channel 7 HD in trade & Investment Expo at Bangkok, Thailand.



Hon'ble Executive Director **Dr. Lokiat Ullah** With all Participants from renowned Pharmaceutical Companies in Bangladesh at Ethio Health Exhibition & Congress, 2022 in Addis Ababa, Ethiopia. This Exhibition was held on 03-05 March 2022. It is the largest International Healthcare and Trade professionals gathering in Ethiopia.



Hon'ble Chairman of Biopharma Ltd. **Dr. Shawkat Ali Laskar** and Executive Director **Dr. Lokiat Ullah** are in the Biopharma Stall at Addis Ababa, Ethiopia along with Hon'ble Commerce Minister HE **Mr. Tipu Munshi**.



Hon'ble Chairman of Biopharma Ltd. **Dr. Shawkat Ali Laskar**, Managing Director **Dr. Mohd. Mizanur Rahman**, Executive Director **Dr. Lokiat Ullah** and Md. Ala Uddin Khan (Head of International Business Department) along with Our Indian Patner Mr. Hitesh Kanani.



Hon'ble Executive Director **Dr. Lokiat Ullah** received an Award as "Greatest brand-2008" at Hotel Marina Bay Sands, Singapore on 21 st January 2019



Hon'ble Executive Director **Dr. Lokiat Ullah**, Md. Ala Uddin Khan (Head of International Business Department) and Abdul Kaium (Executive of International Business Department) along with Our Myanmar Patner Mr Tahir.



Biopharma Limited Stall Inauguration by Legendry Prof. Dr. M. A Faiz (Ex. DG Health Sevice), Prof. Dr. Mahabubul Islam Majumder, Prof. Dr. Ridwanur Rahman and AKM Anwarul Azam (Head of Medical Sevice Department) at BanTropTox Conference



Prof. Dr. Md Ismail Patwary, Prof. Dr. Ridwanur Rahman and Prof. Dr. Mahabubul Islam Majumder handing over of Crest to Biopharma Limited at BanTropTox Conference



Hon'ble Chairman of Biopharma Ltd. Dr. Shawkat Ali Laskar and Managing Director Dr. Mohd. Mizanur Rahman attended at 6<sup>th</sup> International Hepatology Conference along with Legendry Hepatologist Prof. Dr. Mobin Khan and Prof. Dr. Shahinul Alam at Hotel Pan Pacific Sonargaon



AKM Anwarul Azam (Head of Medical Sevice Department), Md Abul Khair (Asst. Sales Manager) and Md Azan Uddin (Sr. RSM) present at Biopharma Limited Stall at 6<sup>th</sup> International Hepatology Conference at Hotel Pan Pacific Sonargaon



AKM Anwarul Azam (Head of Medical Sevice Department), Md Abul Khair (Sr. Asst. Sales Manager), Md Rafiqul Islam (Sr. Executive, PMD) and others were present at Biopharma Stall at Psoriasis Awareness Club Conference at Dhaka Club



Annual Conference & International Scientific Seminar arranged by Association of Physicians of Bangladesh at Hotel Inter Continental, Dhaka



Dr. Lokiat Ullah is handing over of souvenir of Biopharma to the present Hon'ble Minister of Commerce of Bangladesh Mr. Tipu Mushi, MP



Dr. Lokiat Ullah Executive Director (Biopharma Ltd.) has called on to H.E Mr. Zahid Malik, Hon'ble Minister, Ministry of Health, People's Republic of Bangladesh & Dr Athi Sivan T. Mariappan, Chief Coordinator, Malaysian and International Relief Initiatives for Rohingya Refugees.



Dr. Lokiat Ullah (Executive Director of Biopharma Limited) is handing over of raffle draw gift to Doctors at Business Development meeting at Barishal.



Dr. Lokiat Ullah (Executive Director of Biopharma Limited) attended at Business Development meeting at Chandpur



Biopharma Limited arranged a Scientific Seminar on "Abdominal Pain In Pediatric Age Group" at Kushtia

# The 10 Biggest Medical Innovations for 2021

The annual Medical Innovation Summit, organised by Cleveland Clinic Innovations, the development and commercialization division of Cleveland Clinic, is now in its 18th year and has served as a key platform for the introduction of the 10 biggest medical innovations for 2021.

## 1 Gene therapy for haemoglobinopathies What are haemoglobinopathies?

Haemoglobinopathies are genetic disorders that affect the structure or production of the haemoglobin molecule – the red protein responsible for transporting oxygen in the blood. The most common haemoglobinopathies include sickle cell disease and thalassaemia. Together, these disorders affect more than 330,000 children born each year worldwide. Sickle cell disease affects more than 100,000 patients in the United States alone.

An experimental gene therapy has been developed as a result of the latest research into haemoglobinopathies. This therapy should enable affected people to create functional haemoglobin molecules that will reduce the presence of sickle blood cells or red blood cells that are ineffective in cases of thalassaemia. In this way, it will be possible to prevent the complications associated with these disorders.

## 2 New drug for primary progressive multiple sclerosis

Multiple sclerosis (MS) is an autoimmune disease in which the immune system attacks the protective fatty myelin sheath that covers nerve fibres. This attack leads to communication problems between the brain and the rest of the body, often resulting in permanent damage, deterioration and ultimately death.

About 15% of people with MS develop a primary progressive form of the disease. This subset of the disease is characterised by progressive development and a steady progression of signs and symptoms. A new therapeutic monoclonal antibody approved by the FDA with a novel target is the first and only treatment for MS in the primary-progressive MS population.

## 3 Smart pacemakers

Used to prevent or correct arrhythmias, pacemakers and defibrillators deliver electrical impulses to the chambers of the

heart muscle to contract and pump blood to the body. Traditionally, these implanted devices allow remote monitoring through a console at the bedside that transmits data to the doctor in charge of care. Although millions of patients use these devices, many still lack a basic understanding of how they work. Connecting these devices to an application available on patients' smartphones will allow them to gain a

4 better understanding of their cardiac treatment while transmitting valuable data to their doctors.

## New drugs for cystic fibrosis

Cystic fibrosis, a hereditary disease that affects more than 30,000 people in the United States, is characterised by thick, sticky mucus that obstructs the airways and traps germs, leading to infections, inflammation and other health complications.

Caused by a defective transmembrane conductance regulatory protein (CFTR), people affected by this disease must try to stay away from others to limit their exposure to potentially fatal germs. Until last year, the drugs available for the disease were only effective in people affected by certain mutations. A new combination of drugs approved by the FDA in October 2019 has proven to be effective in people with F508 del, the most common mutation in the CF gene, which accounts for approximately 90% of people with the disease.

## Universal treatment of hepatitis C

Hepatitis C, described by the CDC as a "silent epidemic", is one of the biggest public health concerns in the United States. People infected

with the virus face serious risks, including cirrhosis, liver failure and liver cancer, all of which can be life-threatening. There are drugs available to treat the condition, but so far they have proven ineffective on some genotypes of the disease or come with undesirable side effects. A new FDA-approved treatment option, a fixed-dose combination of drugs, has been shown to be more than 90% effective in treating

**6** hepatitis C genotypes 1 to 6, which means that this new treatment is an effective option for a larger number of patients.

#### Non-invasive CPAP for improved lung function in premature babies

Premature babies are often exposed to a range of risks, particularly respiratory risks. Premature babies suffering from Infantile Respiratory Distress Syndrome (IRDS) are most often administered a surfactant during mechanical ventilation. This practice has the potential to cause long-term lung damage and is a major contributor to the development of chronic lung disease. b-CPAP: a new method of non-invasive ventilation has been developed to deliver continuous positive airway pressure to newborns to maintain lung volume during exhalation. Rather than applying constant pressure to the infant, b-CPAP applies oscillating pressure that

**7** reduces physical trauma while stimulating lung growth when administered over a long period of time.

Ensuring safe and effective

treatment of respiratory syndromes in infants.

#### The rise of telemedicine through new practices and policy changes

One of the challenges brought about by the pandemic has been the need to transform medical visits to ensure the safety of patients and doctors. This has been addressed by the increasing use of telemedicine. Virtual care is gradually becoming common practice following a change in policy at government and provider level to ensure increased consumer uptake.

Recognising the importance of these new tools, state and federal regulators have moved quickly

**8** to remove regulatory barriers to telemedicine. These measures have enabled the new practice to develop new programs as well as expand existing networks.

#### Novel device for postpartum haemorrhage

Postpartum haemorrhage affects one to five per cent of women giving birth. Characterised by excessive bleeding after the birth of the child, the complication may require blood transfusions, administration of drugs with dangerous side effects, lengthy and uncomfortable procedures and may even lead to an emergency hysterectomy resulting in loss of fertility. Until now, non-surgical interventions targeting the site of bleeding have been limited to balloon devices that dilate the uterus while compressing the bleeding site. The new approach to postpartum haemorrhage is vacuum-induced uterine tamponade. This method uses the negative pressure created inside the uterus to collapse the bleeding cavity, causing the muscle to close the vessels. This low-tech innovation could save

**9** the lives of women all over the world, especially in developing countries where access to resources is often limited.

#### PARP inhibitors for prostate cancer

Over the past decade, progress has been made in the diagnosis and treatment of prostate cancer. With one in nine men diagnosed with the disease during his lifetime, it remains the second leading cause of cancer death among men in the United States.

Pharmacological inhibitors, known for their success in women's cancer, block proteins called PARPs that help repair damaged tumour DNA in people with mutations in the BRCA1 and BRCA2 genes. Two of them have been shown to delay the progression of prostate cancer in men with refractory cancer

**10** and mutations in the DNA repair pathway. In May 2020, both were approved for the treatment of the disease.

#### New medicines specifically targeting migraines

Usually treated with multi-purpose medications such as high blood pressure medication, antidepressants, anti-convulsion drugs and Botox injections, migraine attacks affect more than 38 million people in the United States, or 12% of the population. These methods, while effective in some cases, do not provide a concrete solution to help relieve migraine pain. In 2018, new drugs have been developed specifically targeting this condition. By blocking the activity of a molecule called calcitonin gene related peptide (CGRP), which reaches its peak during a migraine, this class of drugs is now approved by the FDA. Currently actively prescribed, this new class of drugs represents a major breakthrough in the treatment of migraines.

#### Ref:

<https://healthtech.eu/news/the-10-biggest-medical-innovations-for-2021-according-to-cleveland-clinic/>



## Novel Drug Approvals by FDA for 2021\*

| No. | Drug Name    | Active Ingredient                                    | Approval Date | FDA-approved use on approval date*                                                                                                                                                                                    |
|-----|--------------|------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 44. | Tezspire     | tezepelumab-ekko                                     | 12/17/2021    | To treat severe asthma as an add-on maintenance therapy                                                                                                                                                               |
| 43. | Cytalux      | pafolacianine                                        | 11/29/2021    | To help identify ovarian cancer lesions Press Release                                                                                                                                                                 |
| 42. | Livtency     | maribavir                                            | 11/23/2021    | To treat post-transplant cytomegalovirus (CMV) infection/disease that does not respond (with or without genetic mutations that cause resistance) to available antiviral treatment for CMV - Press Release             |
| 41. | Besremi      | ropeginterferon alfa-2b-njft                         | 11/23/2021    | To improve growth in children five years of age and older with achondroplasia and open epiphyses - Press Release                                                                                                      |
| 40. | Scemblix     | asciminib                                            | 10/29/2021    | To treat Philadelphia chromosome-positive chronic myeloid leukemia with disease that meets certain criteria                                                                                                           |
| 39. | Tavneos      | avacopan                                             | 10/7/2021     | To treat severe active anti-neutrophil cytoplasmic autoantibody-associated vasculitis (granulomatosis with polyangiitis and microscopic polyangiitis) in combination with standard therapy, including glucocorticoids |
| 38. | Livmarli     | maralixibat                                          | 9/29/2021     | To treat cholestatic pruritus associated with Alagille syndrome                                                                                                                                                       |
| 37. | Qulipta      | atogepant                                            | 9/28/2021     | To prevent episodic migraines                                                                                                                                                                                         |
| 36. | Tivdak       | tisotumab vedotin-tftv                               | 9/20/2021     | To treat recurrent or metastatic cervical cancer with disease progression on or after chemotherapy                                                                                                                    |
| 35. | Exkivity     | mobocertinib                                         | 9/15/2021     | To treat locally advanced or metastatic non-small cell lung cancer with epidermal growth factor receptor exon 20 insertion mutations                                                                                  |
| 34. | Skytrofa     | lonapegsomatropin-togd                               | 8/25/2021     | To treat short stature due to inadequate secretion of endogenous growth hormone                                                                                                                                       |
| 33. | Korsuva      | difelikefalin                                        | 8/23/2021     | To treat moderate-to-severe pruritus associated with chronic kidney disease in certain populations                                                                                                                    |
| 32. | Nexvazyme    | avalglucosidase alfa-ngpt                            | 8/6/2021      | To treat late-onset Pompe disease Press Release                                                                                                                                                                       |
| 31. | Saphnelo     | anifrolumab-fnia                                     | 7/30/2021     | To treat moderate-to-severe systemic lupus erythematosus along with standard therapy                                                                                                                                  |
| 30. | Bylvay       | odevixibat                                           | 7/20/2021     | To treat pruritus                                                                                                                                                                                                     |
| 29. | Rezurock     | belumosudil                                          | 7/16/2021     | To treat chronic graft-versus-host disease after failure of at least two prior lines of systemic therapy                                                                                                              |
| 28. | Fexinidazole | fexinidazole                                         | 7/16/2021     | To treat human African trypanosomiasis caused by the parasite Trypanosoma brucei gambiense                                                                                                                            |
| 27. | Kerendia     | finerenone                                           | 7/9/2021      | To reduce the risk of kidney and heart complications in chronic kidney disease associated with type 2 diabetes                                                                                                        |
| 26. | Rylaze       | asparaginase erwinia chrysanthemi (recombinant)-rywn | 6/30/2021     | To treat acute lymphoblastic leukemia and lymphoblastic lymphoma in patients who are allergic to E. coli-derived asparaginase products, as a component of a chemotherapy regimen- Press Release                       |

| No. | Drug Name   | Active Ingredient                             | Approval Date | FDA-approved use on approval date*                                                                              |
|-----|-------------|-----------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------|
| 25. | Aduhelm     | aducanumab-avwa                               | 6/7/2021      | To treat Alzheimer's disease Press Release                                                                      |
| 24. | Brexafemme  | ibrexafungerp                                 | 6/1/2021      | To treat vulvovaginal candidiasis                                                                               |
| 23. | Lybalvi     | olanzapine and samidorphan                    | 5/28/2021     | To treat schizophrenia and certain aspects of bipolar I disorder                                                |
| 22. | Truseltiq   | infigratinib                                  | 5/28/2021     | To treat cholangiocarcinoma whose disease meets certain criteria                                                |
| 21. | Lumakras    | sotorasib                                     | 5/28/2021     | To treat types of non-small cell lung cancer - Press Release                                                    |
| 20. | Pylarify    | piplufolastat F 18                            | 5/26/2021     | To identify prostate-specific membrane antigen-positive lesions in prostate cancer                              |
| 19. | Rybrevant   | amivantamab-vmjw                              | 5/21/2021     | To treat a subset of non-small cell lung cancer - Press Release                                                 |
| 18. | Empaveli    | pegcetacoplan                                 | 5/14/2021     | To treat paroxysmal nocturnal hemoglobinuria                                                                    |
| 17. | Zynlonta    | loncastuximab tesirine-lpyl                   | 4/23/2021     | To treat certain types of relapsed or refractory large B-cell lymphoma                                          |
| 16. | Jemperli    | dostarlimab-gxly                              | 4/22/2021     | To treat endometrial cancer Press Release                                                                       |
| 15. | Nextstellis | drospirenone and estetrol                     | 4/15/2021     | To prevent pregnancy                                                                                            |
| 14. | Qelbree     | viloxazine                                    | 4/2/2021      | To treat attention deficit hyperactivity disorder                                                               |
| 13. | Zegalogue   | dasiglucagon                                  | 3/22/2021     | To treat severe hypoglycemia                                                                                    |
| 12. | Ponvory     | ponesimod                                     | 3/18/2021     | To treat relapsing forms of multiple sclerosis                                                                  |
| 11. | Fotivda     | tivozanib                                     | 3/10/2021     | To treat renal cell carcinoma                                                                                   |
| 10. | Azstarys    | serdexmethylphenidate and dexamethylphenidate | 3/2/2021      | To treat attention deficit hyperactivity disorder                                                               |
| 09. | Pepaxto     | melphalan flufenamide                         | 2/26/2021     | To treat relapsed or refractory multiple myeloma                                                                |
| 08. | Nulibry     | fosdenopterin                                 | 2/26/2021     | To reduce the risk of mortality in molybdenum cofactor deficiency Type A - Press Release                        |
| 07. | Amondys 45  | casimersen                                    | 2/25/2021     | To treat Duchenne muscular dystrophy Press Release                                                              |
| 06. | Cosela      | trilaciclib                                   | 2/12/2021     | To mitigate chemotherapy-induced myelosuppression in small cell lung cancer - Press Release                     |
| 05. | Evkeeza     | evinacumab-dgnb                               | 2/11/2021     | To treat homozygous familial hypercholesterolemia                                                               |
| 04. | Ukoniq      | umbralisib                                    | 2/5/2021      | To treat marginal zone lymphoma and follicular lymphoma                                                         |
| 03. | Tepmetko    | tepotinib                                     | 2/3/2021      | To treat non-small cell lung cancer                                                                             |
| 02. | Lupkynis    | voclosporin                                   | 1/22/2021     | To treat lupus nephritis Drug Trials Snapshot                                                                   |
| 01. | Verquvo     | vericiguat                                    | 1/19/2021     | To mitigate the risk of cardiovascular death and hospitalization for chronic heart failure Drug Trials Snapshot |

\*Ref: <https://www.fda.gov/drugs/new-drugs-fda-cders-new-molecular-entities-and-new-therapeutic-biological-products/novel-drug-approvals-2021>.

## Educational Qualification of 44<sup>th</sup> BCS Preliminary Exam 2021

According to the BCS (Age, Qualification and Examination) Rules-2014 educational qualification for general cadres is-

- A Post Graduation (Master's) degree from any approved university,
- Minimum 4 (four) years of duration graduation degree,
- Applicant having more than one third division/class in academic career will not be eligible to apply in 44th BCS Exam,
- Before the viva test, written test pass all examinees have to submit all original or provisional certificates as education qualification to the commission.

### Age Limit:

- Concerned candidates age should be 21 years old to 30 years old (birth year should be minimum 2nd May 199 & maximum 2nd May 198),
- But for freedom fighter, son/daughter of freedom fighter, physically handicapped candidates & BCS (Health) candidates age should be 21 years old to 32 years old (birth year should be minimum 2nd May 199 & maximum 2nd May 198),
- BCS (General Education) candidates & ethnic minority group candidates age should be 21 years old to 32 years old (birth year should be minimum 2nd May 199 & maximum 2nd May 198).

### Preliminary Exam Process of 44th BCS Test

- After finishing fill up online application form and paying particular fees, capable candidates will be capable to download admit card automatically for 41st BCS Preliminary exam 2019. Without specified admit card any candidate will not participating in 44th BCS Preliminary exam 2019. According to the BCS (Age, Qualification and Examination for Direct Recruitment) Rules, 2014 2 hours preliminary test (MCQ) of 200 (two hundred) marks is seized on various branches of knowledge for analyzing the capability of the candidates.

**There is a Condition, 50% marks will deducted for each wrong answer. No candidates can get unnecessary advantage through assembly answers on guess.**

44th BCS Subjects wise marks distributions:

1. Bangla Language & Literature: 35
2. English Language & Literature: 35
3. About Bangladesh: 30
4. International Matters: 20
5. Environment and Disaster Management & Geography (Bangladesh & World): 10

6. General Science : 15
7. Computer & Information Technology: 15
8. Mathematical Logic: 15
9. Conceptual skills: 15
10. Ethics, Values and Good Governance: 10
11. Total: 200

### 44th BCS Written Examination

Those candidates who pass the Preliminary Test are considered qualified for written examination. According to the BCS Examination Rules-2014, subjects and mark distribution for General and Technical/Professional cadres are as follows:

### For Professional/Technical Cadres:

| No.          | Name of the subjects                    | Marks Distribution |
|--------------|-----------------------------------------|--------------------|
| 1.           | Bangla                                  | 100                |
| 2.           | English                                 | 200                |
| 3.           | General Knowledge Bangladesh Affairs    | 200                |
| 4.           | General Knowledge International Affairs | 100                |
| 5.           | Mathematical Reasoning & Mental ability | 100                |
| 6.           | Job related Subject                     | 200                |
| 7.           | Viva voce                               | 200                |
| <b>Total</b> |                                         | <b>1100</b>        |

### Note:

- Time will fixed for every subject consisting 200 marks. Time duration will 4 hours. In case of subject consisting 100 marks, time limit will 3 hours.
- Examinee must get 50% marks in the written examination to qualifying written exam.

### SYLLABUS FOR BCS PRELIMINARY TEST

|                                                                                                                                     |               |
|-------------------------------------------------------------------------------------------------------------------------------------|---------------|
| বাংলা ভাষা ও সাহিত্য                                                                                                                | পূর্ণমান : ৩৫ |
| ভাষা:                                                                                                                               | মান বন্টন     |
| প্রয়োগ, অপপ্রয়োগ, বানান ও বাক্য শুদ্ধি, পরিভাষা, সমার্থক ও বিপরীতার্থক শব্দ, ধ্বনি, বর্ণ, শব্দ, পদ, বাক্য, প্রত্যয়, সন্ধি ও সমাস | ১৫            |
| সাহিত্য:                                                                                                                            |               |
| ক. প্রাচীন ও মধ্যযুগ                                                                                                                | ০৫            |
| খ. আধুনিক যুগ (১৮০০ - বর্তমান পর্যন্ত)                                                                                              | ১৫            |



### BIOPHARMA LIMITED *Product List*

#### ANTI-BIOTIC & ANTI-BACTERIAL

**Amotid**  
Amoxicillin

**Amotid-CL**  
Amoxicillin + Clavulanic acid

**BESTCEF**  
Cefixime Trihydrate

**Biocap**  
Doxycycline

**Biopen vk**  
Phenoximethyl penicillin

**Cipcin**  
Ciprofloxacin

**Clamycin**  
Clarithromycin

**Erosa**  
Erythromycin

**Gefcin**  
Gemifloxacin

**Lifcin**  
Levofloxacin

**Maczith**  
Azithromycin

**Mepen**  
Meropenem

**Mexclav**  
Cefuroxime+Clavulanic Acid

**Mextil**  
Cefuroxime

**Moxif 400**  
Moxifloxacin

**Revistar**  
Flucloxacillin

**Riboclin**  
Clindamycin

**Supracef**  
Cefradine

**Winner**  
Ceftriaxone

**Zidimax**  
Ceftazidime

#### ANTI-ULCERANT

**Biocid plus**  
Aluminium Hydroxide+  
Magnesium Hydroxide+Simethicone

**Esocon**  
Esomeprazole

**Esocon MUPS**  
Esomeprazole

**Famoloc**  
Famotidine

**Inpro**  
Omeprazole

**Lasocon**  
Lansoprazole

**Lasocon D**  
Dexlansoprazole

**Panpro**  
Pantoprazole

**Rabecon**  
Rabeprazole Sodium

#### ANTI-VIRAL

**BIOFAVI**  
Favipiravir

#### NSAIDs

**Aceta**  
Paracetamol

**Aceta Extend**  
Paracetamol 665 mg

**Aceta One**  
Paracetamol 1000 mg

**Aceta-T**  
Paracetamol+Tramadol HCl

**Aceta-X**  
Paracetamol+Caffeine

**Biocox**  
Etoricoxib

**Clof**  
Aceclofenac

**Napgin**  
Naproxen

**Napgin Plus**  
Naproxen + Esomeprazole

**Perilac**  
Ketorolac Tromethamine

**Top**  
Ketoprofen

**VOLCAN**  
Diclofenac Sodium

#### MUSCLE RELAXANT

**Bacifen**  
Baclofen

**Tolpa**  
Tolperisone HCl

#### LAXATIVE

**Lactu**  
Lactulose

#### ANTI-PROTOZOAL

**ATINID**  
Nitazoxanide

**Biozyl**  
Metronidazole

#### BONE NUTRIENT

**Glucium**  
Glucosamine Sulfate+Chondroitin Sulfate

**Glucium-D**  
Glucosamine Sulfate+ Diacerin

#### ANTI-EPILEPTIC ANTI-CONVULSIVE

**Lirica**  
Pregabalin

#### ANTI-OXIDANT

**Vitaforce**  
Vitamin E+Vitamin C+Beta Carotene

**Vitaforce-S**  
Super Antioxidant (4 Vitamins+4 Minerals)

#### CARDIOVASCULAR

**Asclop**  
Aspirin+Clopidogrel

**BESTCOL**  
Rosuvastatin

**Carved**  
Carvedilol

**Emlon**  
Amlodipine

**Emlon plus**  
Amlodipine+Atenolol



## BIOPHARMA LIMITED *Product List*

**Etnol**

Atenolol

**Lopo**

Losartan Potassium

**Lopo plus**

Losartan Potassium+  
ydrochlorothiazide

**Myoclop**

Clopidogrel

**myocor**

Bisoprolol Fumarate

**Olvance**

Olmesartan Medoxomil

**Olvance-AM**

Olmesartan Medoxomil+  
Amlodipine

**R-pil**

Ramipril

**Trangina MR**

Trimetazidine HCl

**Trova**

Atorvastatin

**Urospin**

Spirolactone+Furosemide

### ANTI-DIABETIC

**Dialina**

Linagliptin

**Diavil**

Vildagliptin

**Empavic**

Empagliflozin

**Formet**

Metformin HCl

**FORMET XR**

Metformin HCl

**Formet-L**

Metformin + Linagliptin

**Formet-V**

Metformin + Vildagliptin

**GLUCORID**

Glimepiride

**Gluco stat**

Gliclazide

### ANXIOLYTIC & ANTI-DEPRESSANT

**Benquil**

Midazolam

**Benzit**

Flupentixol+Melitracen

**Broze**

Bromazepam

**Calm**

Clobazam

**Cloma**

Clonazepam

### PARENTERAL NUTRIENT

**Amilac**

5% w/v Composite Amino Acid+  
D-Sorbitol+Electrolytes

### VITAMIN & MINERAL

**Biovit**

Vitamin B Complex

**Biovit PD**

Multivitamin pediatric drop

**Biovit-E**

Vitamin E

**Biovit-M**

Vitamins+Minerals

**BiovitGold**

Vitamins+Minerals

**Biovit Silver**

Vitamins + Minerals

**Biovit plus**

Iron Polymaltose+  
Vitamin B Complex+Zinc

**Biron plus**

Iron+Zinc+Folic Acid

**Cevalin**

Ascorbic Acid

**Fivita**

Iron+Folic Acid+  
Vitamin B+Vitamin C

**Kidsgro**

Cod Liver Oil  
with Multivitamin

**Neurép**

Vitamin B<sub>1</sub>+B<sub>6</sub>+B<sub>12</sub>

**Orthocal**

Calcium Carbonate

**Orthocal-D**

Calcium Carbonate+Vitamin D<sub>3</sub>

**Ortho-D3**

Cholecalciferol

**Orthorate**

Calcium Orotate

**Zinga**

Zinc Sulphate

### ANTI-FUNGAL

**FUNGATA**

Fluconazole

**Termider**

Terbinafine Hydrochloride

**Vcand**

Voriconazole

### TOPICAL CORTICOSTEROID

**Mexiderm**

Betamethasone Valerate

**Mexiderm-F**

Fusidic Acid+Betamethasone

**Mexiderm-N**

Betamethasone Valerate+  
Neomycin Sulphate

**Xderm**

Clobetasol Propionate

**Xderm N**

Clobetasol Propionate+  
Neomycin Sulphate+Nystatin

**Xderm-S**

Clobetasol Propionate+  
Salicylic Acid

### TOPICAL ANTI-INFECTIVE

**Bacron**

Mupirocin

**CLOTISON**

Clotrimazole+Hydrocortisone

**Enazol plus**

Econazole Nitrate+  
Triamcinolone Acetonide

**Nuba**

Neomycin Sulphate+Bacitracin Zinc

**Nuba Plus**

Neomycin Sulphate+Bacitracin  
Zinc+ Polymyxin B Sulphate



### BIOPHARMA LIMITED *Product List*

#### TOPICAL ANTI-PARASITE

**Scaper**  
Permethrin

#### ANTI-ACNE

**Pimplex**  
Adapalene

#### ANTI-HISTAMINE

**Alerfast**  
Fexofenadine

**Biocin**  
Chlorpheniramine Maleate

**Lorfast**  
Loratadine

**Rinotin**  
Levocetirizine

**Rufecta**  
Rupatadine

#### ANTI-ASTHMATIC

**DoXiflo**  
Doxophylline

**Freeegest**  
Montelukast

**Ketorif**  
Ketotifen

#### EXPECTORANT

**Ambroxol**  
Ambroxol Hydrochloride

**Mucut**  
Bromhexine Hydrochloride

#### ANTI- ANTHELMINTIC

**Azole**  
Albendazole

**Biotrex**  
Levamisole

#### ANTI-EMETIC

**AVERT**  
Medizine HCl

**AVERT plus**  
Medizine HCl+Pyridoxine HCl

**Onstar**  
Ondansetron

#### BPH DRUG

**EZIFLO**  
Tamsulosin HCl

**Eziflo-D**  
Tamsulosin HCl+Dutasteride

#### ANTI-FIBRINOLYTIC

**Bionex**  
Tranexamic Acid

#### ANTI-SPASMODIC

**Relvis**  
Tiemonium methylsulphate

#### GASTROPROKINETIC

**Esogut**  
Domperidone

#### GASTROINTESTINAL AGENT

**UDCA**  
Ursodeoxycholic Acid

#### BRONCHODILATOR

**Salbu**  
Salbutamol

#### SEX STIMULANT

**Immense**  
Sildenafil

**penFIL**  
Tadalafil

#### ANTI-COAGULANT

**Rixoban**  
Rivaroxaban

#### ANTI-SEPTIC & SKIN DISINFECTANT

**BIORUB**  
Isopropyl Alcohol BP+  
Chlorhexidine Gluconate

**BIORUB- I**  
Isopropyl Alcohol+  
Hydrogen Peroxide+Glycerol

#### ANTI-PARASITIC

**Biomec**  
Ivermectin

#### DISEASE-MODIFYING ANTI-RHEUMATIC

**Coroquin**  
Hydroxychloroquine Sulfate

#### OCULAR ANTI-VIRAL AGENT

**Optivir**  
Aciclovir 3%

#### ANTI-ALLERGICS

**LARIF**  
Olopatadine 0.1%

**Olarif DS**  
Olopatadine 0.2%

#### ANTI-BIOTICS

**Chlorovis**  
Chloramphenicol 0.5%

**Cipcin**  
Ciprofloxacin 0.3%

**Lifcin 1.5**  
Levofloxacin 1.5%

**Ocuflox**  
Lomefloxacin 0.3%

**Moxif**  
Moxifloxacin 0.5%

**XITOB**  
Tobramycin 0.3%

#### STERIODS

**Biocort**  
Prednisolone Acetate 1%

**FLURONE**  
Fluorometholone 0.1%

**Infladex**  
Dexamethasone Sodium  
Phosphate 0.1%

#### STERIOD ANTI-BIOTIC COMBINATIONS

**Cipcin-DX**  
Ciprofloxacin 0.3% +  
Dexamethasone 0.1%

**Infladex-TN**  
Dexamethasone 0.1% +  
Tobramycin 0.3%

#### NSAID

**Relve**  
Bromfenac 0.09%

#### ARTIFICIAL TEAR

**Aquatear**  
Povidone 5%

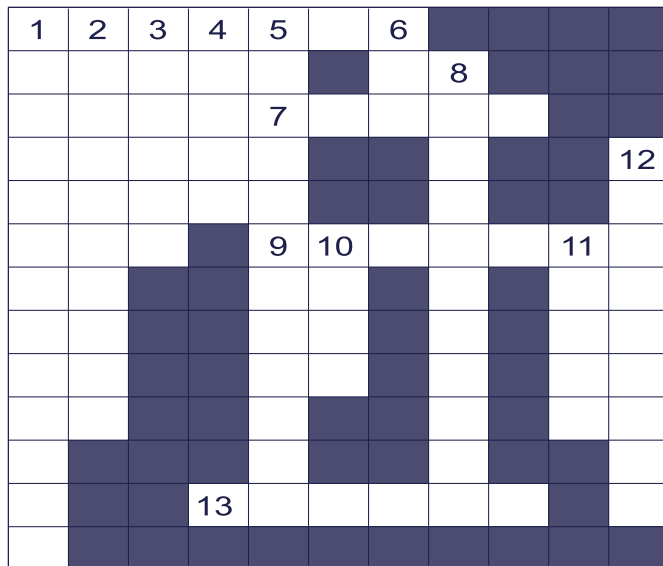
**I-fort**

Polyethylene Glycol 0.4% &  
Propylene Glycol 0.3%

#### EYE VITAMIN & MINERALS

**Biovit - i**  
Lutein Enriched 5  
Vitamin-Minerals

## Word Puzzle



### Instruction

**Above downward:**—

1. A professional medical journal Sponsored by BIOPHARMA LTD.
2. Substance which destroy bacterial cell.
3. Ciprofloxacin preparation of BIOPHARMA.
4. Zinc Sulphate preparation of BIOPHARMA.
5. Symptom of disease.
6. Human Immunodeficiency Virus.
8. Branch of medicine that involves the medical care of infants.
10. Ranitidine preparation of BIOPHARMA.
11. Omeprazole preparation of BIOPHARMA.
12. Symptom of infection related to ORS

**Left to right:**—

1. Azithromycin preparation of BIOPHARMA LTD.
7. Symptom of disease
9. Mosquito-Borne Infectious Disease
13. A medical condition in which the hemoglobin is less than normal.

Please mail  
the Post Card  
within  
July 31  
2022



# Aquatear

Povidone 5%

Eye Drops

Effective substitute of tear fluid

## Letter Puzzle

### Instruction

There are some scattered or unorganized letters and specific boxes for them. Rearrange those letters in such a way that indicate some meaningful word related to human body. Please fill up these boxes so that each letter remain in each box. There is also one shaded box in each row. If you rearrange the shaded letters you'll get antibiotic preparation of BIOPHARRMA.

Please write down that drug name & its generic name in the specific space of the enclosed

BUSINESS REPLY POSTCARD.

HCMAOTS



NORUNE



RAX-Y



DOOLB CLTO



EHATR



LAEOLIV



PRODUCT NAME:.....

GENERIC NAME : .....

## Intern Doctors Only

### THINK A LITTLE

Look, think & with the prizes by answering the questions related to the picture below in the specific space of the enclosed Business Reply PostCard and send it before **July 31, 2022**  
Each of the best 10 winners would get attractive prizes, So, dear doctors, Hurry up...

1



Q. What is the disease?

2



Q. What is FAST and relate to this symptom?

3



Q. What's the name of this machine?

4



Q. What is the disease?

5



Q. What is the fracture it?



8 mg OD Tablet  
50 ml Oral Solution

## Business Reply Post Card

Name : .....

Institution with Batch : .....

Joining Date of Internship : .....

Interested to post graduation in : .....

Mobile : .....

E-mail : .....

## DA Permit No 463

*Don't use  
postage stamp if  
posted in  
Bangladesh*

*Postage will be  
paid by  
addressee*

**Medical Services Department  
BIOPHARMA LTD.**

House No.- 1, Road- No. 1,  
Dhaka Housing, Adabar, Dhaka- 1207  
E-mail: internvision@biopharmabd.com

Name : .....

Institution with Batch : .....

Mobile : .....

### Your valuable suggestions/comments (If any)



# INTERVISION

A Unique Newsletter only for Intern Doctors

April 2022 Volume 09 Number 19

(Please Don't Cut This Portion)

**Think A Little  
Please answer here**

1.

2.

3.

4.

5.

### Medi Quiz

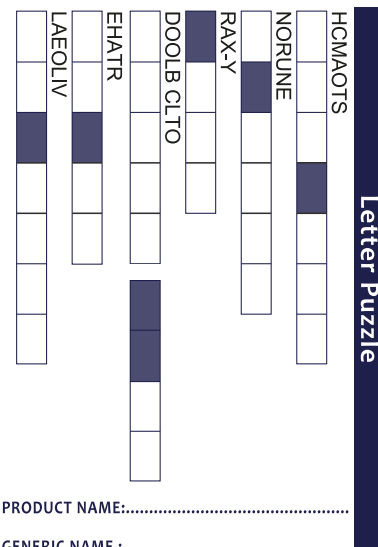
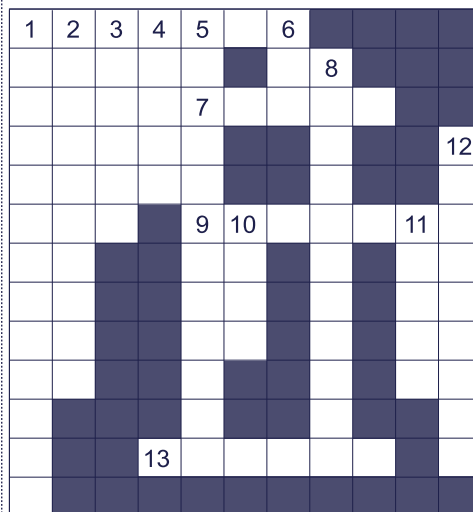
Please write the answer for each question

A : 1 :

A : 2 :

A : 3 :

### Word Puzzle



PRODUCT NAME:.....

GENERIC NAME : .....

# MEDICINE today

a professional medical journal

Published two times a year in January and July by Biopharma Foundation

[www.banglajol.info/index.php/MEDTODAY](http://www.banglajol.info/index.php/MEDTODAY)  
Enlisted in BanglaJOL/AsiaJOL  
Indexed in: DOAJ, Google Scholar, Google.

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**Dear N.A. Kamrul Ahsan**

It's a great pleasure for us to inform you that Medicine Today has been selected for coverage in the Asian Digital Library.

Please visit the following link to search the journal in The ADL Database:

<https://theadl.com/journal.php?search=Medicine Today>

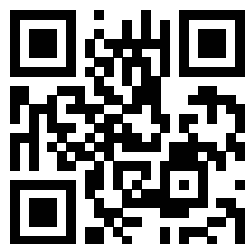
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# **BIOPHARMA** *Manufactures* **BIOEQUIVALENT** *Products*

*Biopharma Limited has been practising its quality policy from the inception in 1999 in order to provide finest quality medicines for the patients in home and abroad. Recently, 11 products have been undergone Bioequivalence (BE) Study in US-FDA approved, renowned Contract Research Organization (CRO) and compared with innovator company's products. These BE studies have shown and proven that Biopharma's Products comply with Pharmaceutical and Pharmacological parameters and Bioequivalent to the Originator Brands.*

**Maczith**  
Azithromycin

equivalent to **Zithromax (Pfizer)**

**Inpro**  
Omeprazole

equivalent to **Losec (AstraZeneca)**

**Mextil**  
Cefuroxime

equivalent to **Zinacef (GlaxoSmithKline)**

**BESTCEF**  
Cefixime trihydrate

equivalent to **Tergecef (Unilab)**

**Clamycin**  
Clarithromycin

equivalent to **Klaricid (Abbot)**

**Gluco<sup>stat</sup> MR**  
Gliclazide Modified Release

equivalent to **Diamicron MR (SERVIER)**

**PRAZO XR**  
Prazosin HCL Extended Release

equivalent to **Minipress XL (Pfizer)**



**We are Exporting to 23 Countries**

**BIOPHARMA**  
LIMITED

