American College of Physicians, Bangladesh Chapter
February 2021

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Message from Governor:

Greetings from ACP Bangladesh Chapter. We are in the middle of a second wave of SARS-COV 2 while we are also simultaneously waiting for the distribution of COVID-19 vaccine. Given the size of the population in developing countries, it is difficult to secure vaccines for everybody. Furthermore, it is also proving to be a challenge to bring and distribute vaccines at scale as well. This makes the whole situation difficult but hopefully with time things can return under control. We can hope good will and humanity will prevail in these pressing times. Congratulations to Oxford University and AstraZeneca as they have decided to distribute 64% of their vaccine to developing nations which will help out a large number of people.

H.A.M. Nazmul Ahasan, MBBS, FCPS, FRCP (Edin and Glasg), MACP, ACP Governor

Health Talk Program:

During the pandemic, it is difficult to arrange CME as before. Instead, we have arranged weekly health talks online. Programs were seen live on social media (Facebook and YouTube). After the main program, a question-and-answer session was also conducted. There were around 11 topics that were discussed.

Topic 1: Medical Ethics; Speaker: Prof. Quazi Tarikul Islam.
Topic 2: Brain Imaging; Speaker: Prof. Firoz Ahmed Quaraishi
Topic 3: Upper GI Endoscopy; Speaker: Prof. Ahmedul Kabir
Topic 4: Current Issues in Medicine; Speaker: Prof. Khan Abul Kalam Azad
Topic 5: Pictorial Medicine; Speaker: Prof. Md. Mujibur Rahman
Topic 6: Pictorial Medicine; Speaker: Prof. Md. Titu Miah
Topic 7: Acute Medicine; Prof. M A Jajil Chowdhury
Topic 8: COVID 19 vaccine- An Update; Speaker: Prof. Shohael Mahmud Arafat
Doctor’s Dilemma:

This year Bangladesh will participate in Doctor’s Dilemma program to be held in ACPCON 2021 in India and ACP’s Internal Medicine Meeting 2021. As it is a new experience for Bangladesh, we have organized a two-stage competition for postgraduate trainee doctors from which 4 final winners were selected. Three participants will compete and one participant will remain as reserve. Competitive examinations were online based.
Asian ACPCON 2021, India:

ACP India Chapter held the first Asian ACPCON 2021 on a virtual platform. India, Bangladesh, Japan and Saudi Arab Chapter of ACP joined this program. The goal of the event is to increase communication and regional cooperation among Asian ACP chapters. Bangladesh Chapter participated in the Doctors dilemma program, E-poster presentation and multiple oral presentation. The theme of the conference was “Resilient Physicians”.

Dear Residents,

Assalamualaikum and Good Evening.

Following is the result of second and final round examination of Residents to form a team "ACP Team Bangladesh 21" who will hopefully Insallah participate in the upcoming “ASIA ACPCON 2021” and ACP/IMM 21. The team will consist of four Residents. Fourth will be kept as reserve. Congratulations. I congratulate every participant for the enthusiasm and cooperation. We would continue it in future as well.

Regards,

H A M Nozmul Ahasan
Governor, ACP Bangladesh Chapter.
On behalf of Examination and Selection Committee.
President Elect:

After all of the election process, ACP has declared Khan Abul Kalam Azad MACP as Governor Elect for Bangladesh Chapter. He will remain as Governor elect for one year and serve as Governor for next four years. His tenure will end on 2026. ACP Bangladesh Chapter congratulates Prof. Khan Abul Kalam Azad, MACP for being elected as Governor Elect.

Short Biography of Prof. Khan Abul Kalam Azad:

Present Position:
Professor of Medicine
Popular medical College.

Past Position or academic rank:
Principal, Dhaka Medical College, Dhaka, Bangladesh
Professor and Head, Department of medicine, Dhaka Medical College, Dhaka, Bangladesh.
Dean, Faculty of Post-graduate Medical Sciences & Research, University of Dhaka

International Affiliation:
Fellow of American College of Physicians (2005)

PROFESSIONAL AND SOCIETY MEMBERSHIPS
- Member, ACP, Bangladesh Chapter.
- Chairman, Communication Committee, ACP, Bangladesh Chapter
- Councilor, Bangladesh College of Physicians and Surgeons
- Member, EC, Bangladesh College of Physicians and Surgeons
- EC member and member of National Research Ethics Committee, Bangladesh Medical Research Council
- Councilor and member of the executive committee, Bangladesh Medical & Dental Council
- Member of the Syndicate, Dhaka University
- Member of the Syndicate, Bangabandhu Sheikh Mujib Medical University
- Member of Executive committee, Bangladesh Rheumatology Society
- Member, EC committee Bangladesh Society of Medicine
- Ex-President, Bangladesh Society of Medicine

EDITORIAL ACTIVITIES
- Executive Editor, Journal of Dhaka Medical College Teachers' Association
- Reviewer, Journal of Medicine (Official journal of Bangladesh Society of Medicine).
- Reviewer, Dissertation of FCPS (Part-II) Student (RTMA Department, BCPS, Mohakhali, Dhaka).
COVID-19 vaccine

Prof. Khan Abul Kalam Azad MACP

COVID-19 vaccine is a vaccine intended to provide acquired immunity against COVID-19. Prior to the COVID-19 pandemic, work to develop a vaccine against the coronavirus diseases SARS and MERS had established knowledge about the structure and function of coronaviruses, which accelerated development during early 2020 of varied technology platforms for a COVID-19 vaccine.

By mid-December 2020, 57 vaccine candidates were in clinical research, including 40 in Phase I–II trials and 17 in Phase II–III trials. In Phase III trials, several COVID-19 vaccines demonstrated efficacy as high as 95% in preventing symptomatic COVID-19 infections. National regulatory authorities have approved six vaccines for public use: two RNA vaccines (tozinameran from Pfizer–BioNTech and mRNA-1273 from Moderna), two conventional inactivated vaccines (BBIBP-CorV from Sinopharm and CoronaVac from Sinovac), and two viral vector vaccines (Gam-COVID-Vac from the Gamaleya Research Institute and AZD1222 from the University of Oxford and AstraZeneca).

Prior to COVID-19, a vaccine for an infectious disease had never before been produced in less than several years, and no vaccine existed for preventing a coronavirus infection in humans. Many vaccine technologies being developed for COVID-19 are not like vaccines already in use to prevent influenza, but rather are using "next-generation" strategies for precision on COVID-19 infection mechanisms. Vaccine platforms in development may improve flexibility for antigen manipulation and effectiveness for targeting mechanisms of COVID-19 infection in susceptible population subgroups, such as healthcare workers, the elderly, children, pregnant women, and people with existing compromised immune systems.

COVID-19 vaccine technology platforms, December 2020

- Inactivated virus
- Non-replicating viral vector
- RNA-based
- Protein subunit
- DNA-based
- Virus-like particle
- Replicating viral vector
- Live attenuated virus
### Authorized and approved vaccines

<table>
<thead>
<tr>
<th>Vaccines/Trade name</th>
<th>Developers/ Sponsors</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ad5-nCoV</td>
<td>CanSino Biologics, Beijing Institute of Biotechnology of the Academy of Military Medical Sciences</td>
<td>Recombinant adenovirus type 5 vector</td>
</tr>
<tr>
<td>AZD1222</td>
<td>University of Oxford, AstraZeneca, CEPI</td>
<td>Modified chimpanzee adenovirus vector (ChAdOx1)</td>
</tr>
<tr>
<td>BBIBP-CorV</td>
<td>Sinopharm: Beijing Institute of Biological Products, Wuhan Institute of Biological Products</td>
<td>Inactivated SARS-CoV-2 (vero cells)</td>
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<tr>
<td>BBV152</td>
<td>Bharat Biotech, Indian Council of Medical Research</td>
<td>Inactivated SARS-CoV-2</td>
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<tr>
<td>Trade name: Covaxin</td>
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</tr>
<tr>
<td>CoronaVac</td>
<td>Sinovac</td>
<td>Inactivated SARS-CoV-2</td>
</tr>
<tr>
<td>Gam-COVID-Vac</td>
<td>Gamaleya Research Institute of Epidemiology and Microbiology;</td>
<td>Non-replicating viral vector (adenovirus)</td>
</tr>
<tr>
<td>Trade name: Sputnik V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mRNA-1273</td>
<td>Moderna, NIAID, BARDA, CEPI</td>
<td>Lipid nanoparticle dispersion containing nucleoside-modified messenger RNA (modRNA)</td>
</tr>
<tr>
<td>Tozinameran</td>
<td>BioNTech, Pfizer, Fosun Pharma</td>
<td>Nucleoside-modified messenger RNA (modRNA)</td>
</tr>
<tr>
<td>EpiVacCorona Vector</td>
<td>Russia</td>
<td>Vaccine based on peptide antigens</td>
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</tbody>
</table>

### Trials and authorizations of approved vaccines

<table>
<thead>
<tr>
<th>Vaccines</th>
<th>Current Phase</th>
<th>Completed phase</th>
<th>Authorization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ad5-nCoV</td>
<td>Phase III (40,000) Global multi-center, randomized, double-blind, placebo-controlled to evaluate efficacy, safety and immunogenicity. Location(s): China, Argentina, Chile, Mexico, Pakistan, Russia, Saudi Arabia Duration: Mar. – Dec. 2020, China; Sep. 2020 – Dec. 2021, Pakistan;</td>
<td>Phase II Neutralizing antibody and T cell responses</td>
<td>Emergency (1) China (early) Full (0)</td>
</tr>
<tr>
<td>Vaccine</td>
<td>Duration</td>
<td>Phase III Details</td>
<td>Location(s)</td>
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<tr>
<td><strong>AZD1222</strong></td>
<td>Sep. 2020 – Nov. 2020, Russia</td>
<td>Interventional; randomized, placebo-controlled study for efficacy, safety, and immunogenicity. Positive results from an interim analysis of four ongoing trials were announced on 23 November 2020 and published on 8 December 2020. Overall efficacy was 70%, ranging from 62% to 90% with different dosing regimens, with a peer-reviewed safety profile. Location(s): Brazil, United Kingdom, India</td>
<td>Emergency (7) UK, Argentina, India, El Salvador, Dominican Republic, Mexico, Bangladesh</td>
</tr>
<tr>
<td><strong>BBIBP-CorV</strong></td>
<td>Phase I–II</td>
<td>Neutralizing antibodies at day 14 after 2 injections</td>
<td>Emergency (2) Egypt, Jordan</td>
</tr>
<tr>
<td><strong>BBV152</strong></td>
<td>Phase I</td>
<td>Dose-dependent neutralizing antibody response on two-dose schedule. Pending Phase II reports.</td>
<td>Emergency (1) India (monitored)</td>
</tr>
<tr>
<td>Vaccine</td>
<td>Phase</td>
<td>Duration</td>
<td>Study Design</td>
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<tr>
<td><strong>CoronaVac Sinovac</strong></td>
<td>III</td>
<td>Nov 2020 – Mar 2021</td>
<td>Double-blind, randomized, placebo-controlled to evaluate efficacy and safety.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Positive results from an interim analysis of a small sample were announced by Turkey on 24 December 2020, with an efficacy of 91%. Additional results were announced by Indonesia on 11 January, with an overall efficacy of 65.3%. The vaccine was 50.4 per cent effective at preventing symptomatic infections in a Brazilian trial.</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>Jun 2020 – Jul 2021</td>
<td>Immunogenicity eliciting 92% seroconversion at lower dose and 98% at higher dose after 14 days</td>
</tr>
<tr>
<td><strong>EpiVacCorona Vector</strong></td>
<td>III</td>
<td>Oct 2020 – Dec 2021</td>
<td>Randomized double-blind, placebo-controlled to evaluate efficacy, immunogenicity, and safety</td>
</tr>
<tr>
<td>Russia</td>
<td></td>
<td></td>
<td>Neutralizing antibody and T cell responses.</td>
</tr>
<tr>
<td><strong>Gam-COVID-Vac</strong></td>
<td>III</td>
<td>Jan 2020 – Dec 2021</td>
<td>Randomized double-blind, placebo-controlled to evaluate efficacy,</td>
</tr>
<tr>
<td>Russia</td>
<td></td>
<td></td>
<td>Neutralizing antibody and T cell responses.</td>
</tr>
<tr>
<td><strong>mRNA-1273</strong></td>
<td>Phase III (30,000) Interventional; randomized, placebo-controlled study for efficacy, safety, and immunogenicity. Positive results from an interim analysis were announced on 15 November 2020 and published on 30 December 2020 reporting an overall efficacy of 94.1%. Location(s): United States Duration: Jul 2020 – Oct 2022</td>
<td>Phase I–II Strong RBD-binding IgG and neutralizing antibody response peaked 7 days after a booster dose, robust CD4+ and CD8+ T cell responses, undetermined durability. Location(s): Germany, United States Duration: May. 2020 – Nov 2020</td>
<td>Emergency (4) UK Bahrain Canada US Mexico Kuwait Singapore Jordan Oman Costa Rica Ecuador Israel Panama Chile Qatar</td>
</tr>
</tbody>
</table>
### Doses, efficacy and storage of some vaccines

<table>
<thead>
<tr>
<th>Vaccines</th>
<th>Doses</th>
<th>Claimed efficacy in P-III trials</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZD1222 AstraZeneca</td>
<td>2 doses</td>
<td>62-90%</td>
<td>Regular fridge temperature</td>
</tr>
<tr>
<td>mRNA-1273 Moderna</td>
<td>2 doses</td>
<td>95%</td>
<td>-20 upto 6 months</td>
</tr>
<tr>
<td>Tozinameran BioNTech, Pfizer</td>
<td>2 doses</td>
<td>95%</td>
<td>-70C</td>
</tr>
<tr>
<td>Sputnik V Gamaleya (Russia)</td>
<td>2 doses</td>
<td>92%</td>
<td>Regular fridge temperature (in dry form)</td>
</tr>
</tbody>
</table>
Challenges

- **Vaccine efficacy**: Efficacy of the vaccine is debatable.
- **Vaccine side effects**: During clinical trials, the only side effects deemed very common were (in order of frequency): pain and swelling at the injection site, tiredness, headache, muscle aches, chills, joint pain, and fever. UK’s Medicines and Healthcare products Regulatory Agency (MHRA) advised that people who have a history of "significant" allergic reaction should not receive the Pfizer-BioNTech COVID-19 vaccine.
- **Storage**: Meticulous cold chain is needed for some available vaccine for distribution. Pfizer vaccines need to be preserved in -70°C. After a vaccine vial is punctured to administer a dose, it is viable for only six hours, then must be discarded, requiring attention to local management of cold storage and vaccination processes.
- **Cost**: Third world countries find it hard to avail vaccine for their people. Vaccines could be well out of reach of many people in many parts of the world. Many national authorities declared subsidies in this purpose and promised their citizen for free vaccination.
- **Manufacturing capacity and availability**: The gap between demand and supply for COVID-19 vaccine is huge. It may take months or even years to vaccinate the majority of the world’s population.
- **Security and corruption**: Interpol called the COVID-19 vaccine "liquid gold" and warned of an "onslaught of all types of criminal activity". It stated that organized crime could infiltrate the vaccine supply chain, steal product through physical means, and data theft, or even offer counterfeit vaccine kits.
- **Misinformation**: Distorted, fraudulent information about vaccine manufacturing, effects of vaccine, spread especially by social media may mar the global vaccination strategy.
- **Vaccine hesitancy**: Some 10% of the public perceives vaccines as unsafe or unnecessary, refusing vaccination – a global health threat called vaccine hesitancy. It increases the risk of further viral spread that could lead to COVID-19 outbreaks.
Vaccination for special groups:

Pregnant and lactating mothers

Studies on vaccine effects are not stout enough, though no trial showed any significant adverse event on pregnant and lactating women. Centre for Disease Control (CDC), USA and Joint Committee on Vaccination and Immunisation (JCVI), UK advised conditional vaccination for pregnant who are at high risk of infection and complications as well as for lactating women.

Children:

There is limited data on vaccination among children (below 18).

New Fellows in last five months:

Prof Shyamal Sarker, MD FACP
Mohammad Aminul Islam, MBBS FCPS FACP

New Members in last five months:

Tahsin Salam, MBBS
Shahadat Hossain MD, MBBS
Azfar Hossain Bhuiyan, MBBS
Mohammad Moniruzzaman, MBBS MD
Md Saidur Rahman, MBBS
Atia Sharmeen, FCPS DDV
Abul Ehsan Md Muhiuddin Osmani, MBBS
Mohammad Abdul Kadir, MBBS
MD FAIZUL HAFIZ CHOWDHURY, MBBS
Md Amir Hossain, MBBS
Atiquzzaman FCPS, MBBS
SADIA SABER
Md Enamul Haque, MBBS
Md. Imran Hossain, MD
Md Rakibul Hasan Rashed, MD
MD Shamim, MBBS MD
Abdul Baten, MBBS
Kazi Shamim Al Mamun, MBBS
Md Saiful Islam, MBBS MD
Md Imam Hosen, MBBS
Fahim Khan Mukarram, MBBS
Partha Pratim Saha, MBBS
Conclusion:

Much of the work that has been done recently centers around the ongoing pandemic and the strive to deliver safe and effective vaccine for all. Unfortunately, misinformation is still a challenge that we face even as the pandemic is ongoing. We need to educate people about the hard reality of COVID-19. A safe and effective vaccine can reduce the case rate but as it is an RNA virus and mutation are common, we must take safety measures to keep population safe and economy viable. ACP Bangladesh Chapter hopes for a speedy and successful vaccine rollout and looks forward to a brighter future ahead.

Prof. HAM Nazmul Ahasan
Governor, ACP-Bangladesh Chapter.