



Update: May 26 & 27, 2020

**UPDATE ON GLOBAL REGIONAL AND NATIONAL
DEVELOPMENTS ON COVID-19**

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Summary

- As of May 27, 18:30 GMT, more than 5.7 million people (5,743,798) are infected with corona virus worldwide causing 354,885 deaths and 2,470,883 recoveries.
- Fluctuations in the number of cases and deaths is still present, as number of cases slightly increased and number of deaths massively increased with in the two days.
- A total of 119,391 cases, 3,589 deaths and 48,618 recoveries were reported as May 27, 3:00 PM EAT in Africa.
- Hemodynamic instability and cardiac arrest complications of COVID-19 was reported in a case report and case series, and the incidence of thrombotic complications was between 16–49% in patients with COVID-19 admitted to ICU. Regular monitoring of haemostatic markers and cardiac markers; and use **prophylactic thrombolytic administration** are recommended.
- Point-of-Care diagnostic tests (POCT) for detecting SARS-CoV-2 antibodies was shown to have lower sensitivity and weak agreement with the currently used RT-PCR in a systematic review and Meta-analysis. It is recommended that its used is currently questionable for clinical purposes and cannot substitute other more reliable molecular tests.
- After National Institutes of Health (NIH) reported interim findings from a randomised, controlled trial on Remdesivir, UK government has announced that selected NHS patients in hospital with COVID-19 will be given this antiviral drug.
- The enrolment of the first participants in a Phase 1/2 clinical trial of a coronavirus vaccine candidate NVX-CoV2373 was announced in Australia.

Recommendations

- Resources permitting, compliance with the interim guidance to prevent severe thrombocytopenia, thromboembolism and various manifestations of profound hemodynamic instability is recommended (regularly monitoring haemostatic markers namely D-dimers, prothrombin time, and platelet count in all patients presenting with COVID-19 and prophylactic use of low molecular weight heparin)

Update on pathogenesis

- Previously, one case study suggested that COVID-19 was a causal factor in immune thrombocytopenia in a COVID-19 patient after closely assessing a 65 years old woman with COVID-19 who developed lower-extremity purpura and epistaxis on the fourth day of her admission.

- Her platelet count was reduced to 1000 per cubic millimetre and on the 9th day, CT of the head showed a sub- arachnoid microhaemorrhage in the right frontal lobe.
- Intravenous immune globulin was administered twice and platelet was transfused with 100 mg of prednisolone; eltrombopag (75 mg per day). Fortunately, she had responded to the treatments [Zulfiqar, A. 2020].
- Similarly, a case series which described about five patients with COVID-19 who were admitted in the ICU revealed that four of the five patients had profound hemodynamic instability and cardiac arrest with acute right ventricular failure.
- Subsequent CT in these patients confirmed the presence of thromboembolism obstructing the left pulmonary artery. In one patient, acute cor pulmonale developed without cardiac arrest; this patient's condition improved with thrombolytic therapy [Christina Creel, 2020].
- The latest data suggest the incidence of thrombotic complications is between 16–49% in patients with COVID-19 admitted to ICU. These studies indicated that further investigations are required on hemodynamic instability or cardiac arrest in COVID-19 patients. In the absence of robust evidence, interim guidance recommends regularly monitoring haemostatic markers namely D-dimers, prothrombin time, and platelet count in all patients presenting with COVID-19 and prophylactic use of low molecular weight heparin [Lancet Hematology, 2020].

Update on Epidemiology (Incidence, mortality, recovery & epidemiologic parameters)

Global

- Currently, more than 5.7 million people (5,709,551) are infected with corona virus worldwide causing 352,753 deaths and 2,451,229 recoveries as of May 27, 12:00 GMT.
- Comparing the last two days' report, the number of new cases is slightly increased from 89,812 on May 25th to 91,840 on May 26th. The number of new deaths has increased between these two days (from 1,179 to 4,048). [This may partly be due to under-reporting on weekends]
- In the United States of America (USA), more than 1.7 million (1,736,743) people are infected with the virus and more than 101,000 people have died as of May 27, 19:00 GMT.
- New York is the most affected state with a total of 373,622 cases and 29,451 deaths followed by New Jersey (157,015 cases & 11,197 deaths) and Illinois (113,195 cases & 4,923deaths).
- The number of new cases in USA is slightly decreased from 19, 790 cases on May 25th to 19,040 cases on May 26th. In contrast, the number of new deaths is substantially increased from 505 to 774 on May 26th.

- Next to USA, Brazil (394,507 cases), Russia (370,680 cases), Spain (283,339 cases) and United Kingdom (265,227 cases) are other most affected countries in the world.
- These countries also reported high number of deaths each accounting for large proportion of total deaths in the world; United Kingdom 37,048 (10.5 %), Italy 32,955 (9.3%), France 28,530 (8.1%) and Spain 27,117 (7.7 %).

Africa

- According to Africa CDC, a total of 119,391 cases, 3,589 deaths and 48,618 recoveries were reported as of May 27, 3:00 PM EAT.
- South Africa remained the leading country with a total of 24,264 cases and 524 deaths. Even though the number of new cases is declining since May 24th(from 1240 to 649 new cases on May 26th), the number is still very high compared to previous weeks' report. Similarly, the number of new cases is gradually increasing and the highest number of new deaths (52) was reported on May 25th followed with 43 on May 26th.
- Based on Worldometer report, Egypt (18,756), Algeria (8,697), Nigeria (8,344) and Morocco (7,584) are the other African countries with high number of COVID-19 cases.
- More than two third 2,564 (71.4%) of the total deaths in the continent were reported from six countries namely; Egypt (797), Algeria (617), South Africa (524), Nigeria (249), Morocco (202) and Cameroon (175).

Ethiopia

- Among the 7,762 total laboratory tests carried out in the last 48 hours, 76 additional COVID-19 cases were identified in the country raising the total number of cases to 731.
- Seventy five of the additional cases are Ethiopians and one person with Israeli Citizen , their age ranges from 9 to 79 years and more than two third 51 (67.1%) of them are males.
- Out of the 76 additional cases, 44 of them have travel history and 9 have contact history with confirmed COVID-19 case while the rest 22 have no travel or contact history.
- More than one third 28 (36.8%) of these cases were reported from Addis Ababa, 23 from Amhara, 11 from Somali, 5 from Tigray, 3 from Hareri and 1 from Oromia region and the rest five are cross border drivers.
- The ministry also reported that additional 22 people (20 from Addis Ababa, 2 from SNNPR) are fully recovered from the disease raising the total number of recoveries to 181. In addition, a 32 years old female Ethiopian who was admitted in the Intensive Care Unit due to other medical condition has passed away on May 25th, 2020.
- Therefore, a total of 91,616 laboratory tests were conducted and 731 confirmed cases, 6 deaths and 181 recoveries were reported as of May 27, 4:00 PM EAT.

- Out of the total 542 active cases, one of them is in the intensive care unit, while all the others are having mild form of the disease and receiving medical care in the designated treatment centre.

Update on Diagnosis

- A systematic review and meta-analysis of real-world data on Point-of-Care diagnostic tests (POCT) for detecting SARS-CoV-2 antibodies was conducted by collecting the current evidence on commercially available POCT for SARS-CoV-2 antibodies. The review stresses that these kits may be scarcely reliable in real-world settings. The results showed only a weak agreement between POCT when compared with RT-PCR. Moreover, a pooled sensitivity of only 64.8% was reported. The pooled specificity was found to be 98.0% (95%CI 95.8–99.0), with high heterogeneity and risk of reporting bias. The authors concluded that the use of available POCT for SARS-CoV-2 antibodies is currently questionable for clinical purposes and cannot substitute other more reliable molecular tests, such as assays based on the RT-PCR. But also noted that the review had limitations such as the small number of studies, the small sample sizes and the high heterogeneity between studies, which warrants further high-quality research in the field (Ricco et al., 2020).

Update on Treatment

- UK government has said that selected NHS patients in hospital with COVID-19 will be given the antiviral drug remdesivir after early trial data showed that it shortened the time to recovery by about four days. Last month the US National Institutes of Health (NIH) reported interim findings from a randomised, controlled trial that began in February involving 1063 patients from several countries including the US, the UK, and Singapore. Although no findings have yet been published, the NIH said that remdesivir reduced the median time to recovery from 15 to 11 days when compared with placebo, and it reduced mortality to 8.0% among patients taking remdesivir versus 11.6% in the placebo group (P=0.059). Remdesivir has been made available in the UK through the Early Access to Medicines Scheme (EAMS) after a positive scientific opinion from the Medicines and Healthcare Products Regulatory Agency (MHRA). Similar arrangements have already been made in other countries, including an emergency authorisation from the US Food and Drug Administration and by regulatory authorities in Japan (Kmietowicz 2020).

Update on Vaccine

- Novavax, Inc., a late-stage biotechnology company developing next-generation vaccines for serious infectious diseases, announced on 25th May 2020 the enrollment of the first participants in a Phase 1/2 clinical trial of its coronavirus vaccine candidate NVX-CoV2373, a stable prefusion protein made using its proprietary nanoparticle technology. NVX-CoV2373 includes Novavax' proprietary Matrix-M™ adjuvant to enhance immune responses and stimulate high levels of neutralizing antibodies. Preliminary immunogenicity and safety results from the Phase 1 portion of the trial are expected in July 2020. The Phase 1/2 clinical trial is being conducted in two parts. The Phase 1 portion is a randomized, observer-blinded, placebo-controlled trial designed to evaluate the immunogenicity and safety of NVX-CoV2373, both adjuvanted with Matrix-M and unadjuvanted. The trial is enrolling approximately 130 healthy participants 18 to 59 years of age at two sites in Australia. The protocol's two-dose trial regimen assesses two dose sizes (5 and 25 micrograms) with Matrix-M and without. The Phase 2 portion is expected to be conducted in multiple countries and would assess immunity, safety and COVID-19 disease reduction in a broader age range. The trial is being supported by the recently announced funding arrangement with the Coalition for Epidemic Preparedness Innovations (CEPI)(NOVAVAX 2020).

Update on personal protective equipment

Face mask use

- In one article, the writer notes it is important to determine the appropriate mask type where there is a policy that everyone in public area wears masks not to transfer their germ to others. It was indicated the most important factor in choosing mask type depends on how well it can contain user-generated droplets and that the compliance depends on how comfortable the mask is, especially for a long term use. It was revealed that the filters of high efficiency particulate air masks such as N95 are affected by the moisture in the exhaled air and it is not recommended to use single mask for longer than 4 hours. When the more tightly these masks fit to the face, droplets will be better contained inside it and will break the mask filter faster. If symptomatic patients wear these masks properly-fitted, they are possibly suffocated by own secretions, otherwise the mask will be unsealed and useless. The

author determined surgical mask, which has proven effectiveness although loosely fitted, is the best type for a person wearing a mask, with or without symptoms (Kim, 2020).

- One article provided a novel idea on how to combine the use of a reusable CPR mask and a piece of the surgical face mask to limit the amount of face mask uses but still have the same protective value. In the experiment, the oneway valve of the CPR mask was removed leaving the open connector with an outside diameter of approximately 20 millimeters. On the surgical mask, the metal nose clip and elastic ear loops, as well as rectangular samples, were cut out. The samples were used to cover the connector of the CPR mask tightly sealed the sample on the connector with a rubber band or teflon tape, thus giving the CPR reusable mask the same filter from the surgical face mask. It was discussed the CPR mask can easily be cleaned (by using 75% alcohol solution or liquid Bleaching Agents) after use and the surgical mask piece can be thrown away. Also that we can have at least 6 filter pieces per piece of surgical mask. The authors stated by proving that the CPR mask is totally sealed with the isolation examination experiment, the filter is 100% provided by the surgical facemask thus giving the exact same protection value. They added that surgical masks fit loosely on the face around the edges and small airborne particles can still get through those edges. Whereas the CPR mask, can fit tightly on the user's face, thus giving even higher protection. The authors suggested this method should be applied where people cannot afford to have enough surgical masks to protect themselves and that it is especially effective for people who have to be in a crowded place for a short period of time, being in public transportation for example. (Phan and Ching, 2020).

Psychosocial wellbeing updates

- A study (Wu et al., 2020) on crisis communication and peer support during this pandemic has recommended three strategic principles for health managers. These are effective crisis management; providing up-to date information for the staff; providing continuous and a range of support for the staff and normalizing the feeling. In addition, health managers need to have compassion and empathy to their staff as well as understand their situation in such times.

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