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

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Summary

- Worldwide, as of June 22, 12:00 GMT, more than nine million (9,072,735) people are infected with coronavirus causing 471,177 deaths.
- As of June, 22th, 3:00 PM EAT, a total of 306,567 cases 8,115 deaths and 146,212 recoveries from COVID-19 were reported in Africa.
- The number of new cases has peaked globally and within Africa this past weekend
- Although it has been hypothesized that angiotensin-converting enzyme inhibitors (ACEIs)/angiotensin receptor blockers (ARBs) may increase susceptibility and worsen prognosis, a cohort study from Denmark has shown no significant association between prior ACEI/ARB use and mortality or higher incidence rate of COVID-19 after adjusting for baseline demographics and comorbidities, recommending patients not to discontinue their medication.
- Additional modelling studies are indicating combining the public health control interventions maximises the effect of decreased transmission rather than single intervention.

Recommendations

- Acceptability of psychosocial interventions for healthcare professionals seems low. Finding acceptable intervention and delivery modality is important.

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

Global

- Worldwide, as of June 22, 12:00 GMT, more than nine million (9,072,735) people are infected with coronavirus causing 471,177 deaths and 4,855,156 recoveries.
- Out of the total active cases, 3,691,638 (99%) were mild cases and only 54,764 (1%) were in critical or serious condition.
- On June 19th, additional 180, 874 cases were reported globally, which was the highest number of new cases recorded since the pandemic started. The number has slightly decreased in subsequent days (156,922 on June 20th and 130,382 on June 21th respectively.
- Consistently, United States of America (USA) is the first leading country with both high number of cases and deaths in the world. As of June, 22th, 12:00 GMT, more than 2.3 million (2,356,802) people were infected with the virus and 122,250 deaths were reported in

the country which accounted for equal proportion (26.0 %) of total cases and deaths in the world.

- In the last three consecutive days, both the number of new cases and new deaths in USA were decreasing; from 33,539 new cases & 719 deaths on June 19th to 26,079 new cases & 267 deaths on June 21th.
- New York (411,264 cases), California (172,077 cases) and New Jersey (172,077 cases) are the three most affected states in US which accounted for almost one third (32.1%) of total cases in the country.
- In Brazil, more than 1 million people (1,086,990) are infected with the virus and the death toll also exceed 50,000 as of June 22th, 12:00 GMT.
- Other countries with high number of corona cases include Russia (592,280), India (426,910) and United Kingdom (304,331).
- UK is the third country with high number of deaths (42,632 deaths) while India (13,703 deaths) and Russia (8,206) reported relatively lower number of deaths so far.

Africa

- As of June 22th, 3:00 PM EAT, a total of 306,567 cases 8,115 deaths and 146,212 recoveries from COVID-19 were reported in Africa.
- The number in South Africa exceed 90,000 (97,302 cases), which accounted for close to a third of total cases reported in the continent. Based on Wordometer report, the number of new cases in the country is persistently increasing and on June 20th, the highest number of new cases (4,966) were reported in the country.
- Similarly, the number of new cases in Egypt is continuously increasing and the highest number (1,774) was reported on June 19th. Until now, a total of 55,233 cases are reported in the country contributing for 18.1 % of total cases in Africa.
- Egypt is also the leading country with high number of deaths in the continent and as of June 22th 3:00 EAT, a total of 2,193 people have died in the country.
- Other African countries with high number of COVID-19 cases and deaths include; Nigeria (20,244 cases and 518 deaths), Ghana (14,154 cases and 85 deaths), Cameroon (11,892 cases and 276 deaths), and Algeria (11,771 cases and 845 deaths).

Ethiopia

- According to the Ministry of Health report, a total of 12,543 laboratory tests were carried out in the past three days and 593 additional COVID-19 cases were identified in the country.

- Five hundred ninety one (591) of these cases are Ethiopians while the rest 2 are citizen of other countries. The age of the additional cases ranges from 2 months to 84 years and 331 (55.8%) of them are males.
- More than half 350 (59.0%) of these cases were reported from Addis Ababa, 132 from Dewale and Galile quarantine center, 30 from Oromia, 21 from Dire Dawa, 19 from Amhara, 14 from Somali, 7 from Afar, 6 from Gambella, 6 from SNNPR, 4 from Tigray, 3 from Benshangul Gumuz and 1 from Hareri region.
- The ministry also reported that additional 270 people (228 from Addis Ababa, 18 from Somali, 12 from Amhara, 5 from Oromia, 3 from Tigray, 2 from Benshangul, 1 from Gambella and 1 from SNNPR) are fully recovered from the disease raising the total number of recoveries to 1,297.
- In addition, three people (2 males and 1 female) have passed away in the last three days raising the total number of deaths in the country to 75.
- Therefore, a total of 219,566 laboratory tests were conducted and 4,663 confirmed cases, 75 deaths and 1,297 recoveries were reported as of June 22th, 5:00 PM EAT.
- Out of the total 2,839 active cases, 29 of them are in critical condition and receiving treatment in the intensive care unit, while the others are having mild form of the disease.

Update on Diagnosis

- A study investigated the feasibility of serological total antibody tests combined with RT-PCR for detection of SARS-COV-2. It was a retrospective study in which 375 patients were enrolled during the outbreak of SARS-COV-2 from 25th January to 16th March 2020. The blood samples (5 mL) were collected before patients were discharged from the hospital. Sample taking time varied from 0−10, 11−20,>20 days after illness onset. Specimens of 141 COVID-19 patients and 234 controls were collected at one of the aforementioned three time periods. Serum samples and throat swabs were collected from 375 patients for total antibody testing against SARS-COV-2 and RT-PCR analysis, respectively. The results indicated that diagnostic sensitivity and specificity were 95.7 % and 98.7 %, 92.2 % and 100 % by total antibody tests and RT-PCR, respectively. The sensitivity and specificity of total antibody tests combined with RT-PCR were 98.6 % and 98.7 %. The sensitivity of the combined method was significantly higher than RT-PCR, and similar to that of total antibody tests. This study is indicated to support the advantage of the combined method for detection of SARS-COV-2 with a high

degree of sensitivity and specificity, as a useful tool for accurate diagnosis and timely treatment of suspected patients, epidemiological investigation, as well as monitoring ongoing outbreaks of infections with SARS-COV-2(Wang, 2020).

▪ In one article, the diagnostic accuracy of SARS-CoV-2 serological tests was reviewed. Scientific articles, both peer reviewed and non-peer reviewed reports, on immunological tests for detection of SARS-CoV-2 antibodies up to 25 April 2020 were included in the review. The meta-analysis yielded a summary sensitivity of 82% for IgM, and 85% for IgG and total antibodies. For specificity, the pooled estimate were 98% for IgM and 99% for IgG and total antibodies. The authors noted the available serological tests included in the review can be used for research purposes and that serological tests should be used for prevalence surveys only in hard-hit areas (Caini et al., 2020).

Update on treatment

▪ It has been hypothesized that angiotensin-converting enzyme inhibitors (ACEIs)/angiotensin receptor blockers (ARBs) may make patients more susceptible to COVID-19 and to worsen out comes through upregulation of the functional receptor of the virus, angiotensin-converting enzyme 2. In a study conducted in Denmark, to examine whether use of ACEI/ARBs was associated with COVID-19 diagnosis and worse outcomes in patients with COVID-19, a retrospective cohort study using data from Danish national administrative registries was conducted. 4,480 patients with COVID-19 were included (median age, 54.7 years [interquartile range, 40.9-72.0]; 47.9%men). There were 895 users (20.0%) of ACEI/ARBs and 3,585 nonusers (80.0%). In the ACEI/ARB group, 18.1% died within 30days vs 7.3% in the non-user group, but this association wasn't significant after adjustment for age, sex, and medical history (adjusted hazard ratio [HR], 0.83[95%CI, 0.67-1.03]). Death or severe COVID-19 occurred in 31.9% of ACEI/ARB users vs 14.2% of nonusers by 30days (adjusted HR, 1.04[95%CI, 0.89-1.23]). In the nested case-control analysis of COVID-19 susceptibility, 571 patients with COVID-19 and prior hypertension (median age, 73.9 years; 54.3% men) were compared with 5710 age- and sex-matched controls with prior hypertension but not COVID-19. Among those with COVID-19, 86.5% used ACEI/ARBs vs 85.4% of controls; ACEI/ARB use compared with other antihypertensive drugs wasn't significantly associated with higher incidence of COVID-19 (adjusted HR, 1.05 [95%CI, 0.80-1.36]). Therefore, this study found no significant association between prior ACEI/ARB use and mortality or severe COVID-19 after adjusting for baseline demographics and comorbidities. In analyses of susceptibility, ACEI/ARB use wasn't associated with a higher incidence rate of COVID-19 diagnosis

compared with users of other antihypertensive drugs. These findings do not support discontinuation of ACEI/ARB medications that are clinically indicated in the context of the COVID-19 pandemic (Fosbøl, Butt et al. 2020).

Update on Public Health Control

- Epidemics of respiratory tract infections with a basic reproductive number (R0) > 1 promise a great deal of potential to spread quickly. In such outbreaks, using a combination of different control interventions to lower R0 below 1 is essential.
- Modelling studies indicated the difference in the rate of transmission brought about by individual non-pharmaceutical interventions (NPIs) and a combination of the interventions.
- A significant proportion of the cases should be identified and isolated. The rate of contact tracing and quarantine ought to be proportionally high and physical distancing should be maintained.
- In the UK, a combined intervention of case isolation with contact tracing reduced the transmission by 47%, this was done employing self-isolation combined with manual contact tracing. When self-isolation was combined with manual contact tracing the transmission was reduced by 64% and when self-isolation was combined with household quarantine the reduction was by 37%.
- However, combining mass testing (testing 5% of the population each week) solely with case isolation reduced the transmission only by 2%. In the absence of other interventions using mass testing alone does not affect much change in the risk of transmission.
- Authors argued that these and other ongoing interventions, such as social distancing are not effective in reducing the risk of transmission. However, combining the interventions maximises the effect **(**MacIntyre CR, 2020).

Update on personal protective equipment

Face mask use

- In one study low temperature process hydrogen peroxide (H_2O_2) was used to sterilize used FFP2 respirators to evaluate if respirators can be reprocessed and still fulfil the requirements for filtration efficiency outlined by European Standard EN 149. The method is already approved to decontaminate FFP2 respirators by the FDA. Decontaminated respirators were also checked

for residual peroxide by a single-gas detector for H_2O_2. The total inward leakage of the protective respirators was quantitatively tested with 10 test persons in an atmosphere charged with paraffin aerosol according to the EN 149. Ten new and ten decontaminated FFP2 respirators were tested for filtration efficiency. None of the respirators exceeded the maximum acceptable concentration of peroxide. The authors concluded FFP2 respirators can be safely reprocessed once after decontamination with plasma peroxide sterilization, where after they still fulfil EN 149 requirements and that this method allows to almost double the current number of available FFP2 respirators (Widmer and Richner, 2020).

Update on Psychosocial wellbeing

- A study from the US reported high level of mental distress among healthcare professionals: acute stress (57%), depression (48%) and anxiety (33%). However, the interest of health professionals to receive psychosocial support was low: almost half (49%) of the participants were not interested with the psychological interventions being provided.
- This study was conducted among front-line health workers in the early stages of the pandemic and response rate was very low (13.7%) (Shechter et al., 2020).
- A commentary on strategies to improve health workers psychosocial wellbeing indicated that since the psycho social problems health workers are facing is at different level (family, workplace and community) interventions are required at all the three levels (Mahalakshmy et al., 2020).
- Acceptability of an intervention may need to be checked prior to implementation. Availing the psychosocial intervention may not guaranty its use. In conclusion, for a country with resource limited setting making sure the appropriateness and acceptability of any intervention may be efficient and cost effective.

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