Update: 15-18 August, 2020

UPDATE ON GLOBAL REGIONAL AND NATIONAL DEVELOPMENTS ON COVID-19

THE KNOWLEDGE SYNTHESIS TEAM

CDT-AFRICA, ADDIS ABABA UNIVERSITY

www.cdt-africa.org

Summary

- The US FDA issued an emergency use authorization (EUA) to another diagnostic test called SalivaDirect COVID-19 that uses saliva for detection.
- A decrease in mortality was reported with the use of Tocilizumab in ICU admitted COVID-19 patients in a retrospective study
- A latest review indicates a 40% and 97% protection with cloth face masks. The variance is related to the type of cloth used, the number of layers, and the number of washing cycles. It was highlighted there is evidence showing the efficacy of cloth masks decreases 20% after the fourth washing and drying cycle because repeated washing diminishes the microfibers in the fabric increasing the size of the pores.
- Face masks may affect respiratory function in people with lung problems and caution is required.
- In countries with limited supply of masks, providing face mask to the elderly and those with infection reduces both new infection and mortality.

Recommendations

- Continuing to strengthen wearing face masks important for reducing spread of infection and mortality. Emphasis on the elderly and those at risk and those with infection
- Whenever possible, limiting the number of wash cycle seems important although there is no explicit guidance on this.

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

- Novel corona virus has become a major public health threat affecting 213 countries and territories with more than 22 million cases and 773, 741 deaths worldwide.
- The highest number of cases (5.6 million) is reported from United States of America (USA) which accounted for one fourth (25.4%) of total cases in the world.
- Brazil (3,363,235 cases), India (2,706,450 cases) and Russia (932,493 cases) are other countries severely hit by the pandemic.
- According to Africa CDC, a total of 1,128,245 cases, 25,884 deaths and 846,330 recoveries were reported in the continent as of August 18th, 3:00 PM EAT.
- More than half 589,886 (52.3 %) of total cases in Africa were reported from South Africa followed by Egypt (96,590 cases), Nigeria (49,485 cases), Morocco (43,558 cases) and Ghana (42,653 cases).

- In Ethiopia, additional 79,091 laboratory tests were performed in the last four days and 5,132 new cases were detected raising the total number of cases to 31,336.
- Between August 14 -17, 2020, additional 1,096 people are fully recovered from the disease, while 65 people passed away in different parts of the country.
- So far, 629,210 laboratory tests were carried out and 31,336 confirmed cases, 544 deaths and 12,524 recoveries were reported according to the ministry of health data.

Update on Diagnosis

- The US FDA issued an emergency use authorization (EUA) to another test which uses saliva. The EUA was granted to Yale School of Public Health for its SalivaDirect COVID-19 diagnostic test. The test uses a new method of processing saliva samples when testing for COVID-19 infection. It does not require any special type of swab or collection device; a saliva sample can be collected in any sterile container. It was noted this test is unique because it does not require a separate nucleic acid extraction step. It has also been validated and authorized for use with different combinations of commonly used reagents and instruments, which means the test could be used broadly in most high-complexity labs(FDA, 2020).

Update on treatment

- This is a retrospective, observational cohort study that aimed to investigate the association between tocilizumab exposure and hospital-related mortality among patients requiring intensive care unit (ICU) support for COVID-19. Tocilizumab, a monoclonal antibody directed against the interleukin-6 receptor, has been proposed to mitigate the cytokine storm syndrome associated with severe COVID-19. Between March 1 and April 22, 2020, 764 patients with COVID-19 required support in the ICU of 13 Hospitals in US, New Jersey, of whom 210 (27%) received tocilizumab. Factors associated with receiving tocilizumab were patients' age, gender, renal function, and treatment location. 630 patients were included in the propensity score-matched population, of whom 210 received tocilizumab and 420 did not receive tocilizumab. 358 (57%) of 630 patients died, 102 (49%) who received tocilizumab and 256 (61%) who did not receive tocilizumab. In the primary multivariable Cox regression analysis with propensity matching, an association was noted between receiving tocilizumab and decreased hospital-related mortality (HR 0·64, 95% CI 0·47–0·87; p=0·0040). Similar associations with tocilizumab were noted among subgroups requiring mechanical ventilatory support and with baseline C-reactive protein of 15 mg/dL or higher. These results show an

association between C-reactive protein levels, tocilizumab, and survival, potentially suggesting that tocilizumab might exert its best effects among patients with COVID-19 progressing to an inflammatory state. Even though this study indicated that patients with COVID-19 requiring ICU support who received tocilizumab had reduced mortality, continued evaluation of tocilizumab in a randomised trial for patients with severe COVID-19 is warranted (Biran, Ip et al.)

Update on personal protective equipment

Face mask use

- One review found that the use of mouth nose coverings seems to be linked to relevant protection during close contact situations but that there is only weak evidence for wearing a face mask as an efficient hygienic tool to prevent the spread of a viral infection. In this article, the pathophysiological consequences of wearing a face mask was also presented. The authors noted they found evidence for significant respiratory compromise in patients with severe obstructive pulmonary disease, secondary to the development of carbon dioxide retention (hypercapnia) and that this could also happen in patients with lung infections, with or without SARS-CoV-2. Hence, patients must be individually educated about the risk of wearing face covering (Matuschek et al., 2020).

- In a new systematic review (from Brazil), the efficacy of cloth masks in preventing COVID-19 and other respiratory infections was analysed. In this review, nine studies were included and it was noted there is a variation between 40% and 97% of protection among the cloth face masks addressed in the studies. The variance is related to the type of cloth used, the number of layers, and the number of washing cycles. It was highlighted there is evidence showing the efficacy of cloth masks decreases 20% after the fourth washing and drying cycle because repeated washing diminishes the microfibers in the fabric increasing the size of the pores. The authors noted that this contradicts with what is recommended by Brazilian Health Regulatory Agency, which indicates up to 30 washing cycles. They also noted that the WHO encourages the use and care of cloth masks, but does not restrict the number of washing cycles, while the Brazilian Ministry of Health recommends changing masks after signs of wear. The authors recommended to discard and replace masks after the fourth washing cycle (Lima et al., 2020).

Public health control measures

- Universal masking (either medical or cotton) is deemed effective in reducing SARS-CoV-2 transmission and the number of deaths secondary to COVID-19. Universal masking declared early on is increases effectiveness of the intervention. However, in circumstances where availability of mask limited strategizing the distribution is mandatory.

- A newly published study compared the effect of targeting a selected group of population on the disease transmission and death caused by COVID-19. Four scenarios were considered to see the impact of the strategies on the overall disease burden and death. The first scenario was random distribution of medical masks to the general population. The second scenario was providing only to the elderly; third a distribution both to the elderly and detected cases, and the last one targeted only detected cases as far as the mask supply lasts.

- From these strategies the random distribution bears the least effectiveness in reducing the number of cases and deaths. The reduction in the number of cases brought about by prioritizing the elderly was not significant, however the number of deaths was significantly reduced. This finding has a wider application even to the remaining segment of high-risk population (people with comorbidities). The finding has a unique importance in areas where people with comorbidities are known and can be addressed with this intervention. Nevertheless, plentiful supply of masks has narrowed the difference between random distribution and covering only high-risk groups.

- Distributing only to detected cases was also not as effective, by providing mask to 50% of detected cases the number of deaths would only be decreased by 10%. The limited case detection rate gives access only to the few number of cases whom, are identified in the process. This strategy works best when the number of detected cases increase.

- Optimal outcome in reducing both infection and death was obtained when the mask distribution involved both infective cases and the elderly. It is important to note that involving more groups with additional risk markers helps further increases this effect.

- Considering universal masking strategy is already in effect in Ethiopia, targeting a specific group of population may not be warranted. However, strengthening the already existing intervention surrounding high risk groups and infective individuals will maximise the effect of the universal masking interventions (Worby CJ et al, 2020).

Reference list

- African Union; COVID -19 updates. https://au.int/en/covid19
- Biran, N., A. Ip, J. Ahn, R. C. Go, S. Wang, S. Mathura, B. A. Sinclaire, U. Bednarz, M. Marafelias, E. Hansen, D. S. Siegel, A. H. Goy, A. L. Pecora, I. S. Sawczuk, L. S. Koniaris, M. Simwenyi, D. W. Varga, L. K. Tank, A. A. Stein, V. Allusson, G. S. Lin, W. F. Oser, R. A. Tuma, J. Reichman, L. Brusco, Jr., K. L. Carpenter, E. J. Costanzo, V. Vivona and S. L. Goldberg "Tocilizumab among patients with COVID-19 in the intensive care unit: a multicentre observational study." The Lancet Rheumatology.
- Center of Disease Control and Prevention Africa https://africacdc.org/covid-19-update/
- Ethiopian Public Health Institute CoronaVirus Update; https://www.ephi.gov.et/index.php/public-health-emergency/novel-corona-virus-update
- FDA. 2020. FDA NEWS RELEASE: Coronavirus (COVID-19) Update: FDA Issues Emergency Use Authorization to Yale School of Public Health for SalivaDirect, Which Uses a New Method of Saliva Sample Processing [Online]. Available: https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-issues-emergency-use-authorization-yale-school-public-health [Accessed 17 August 2020.
- John Hopkins, Corona Virus Resources https://coronavirus.jhu.edu/map.html
- LIMA, M. M. S., CAVALCANTE, F. M. L., MACEDO, T. S., GALINDO NETO, N. M., CAETANO, J. A. & BARROS, L. M. 2020. Cloth face masks to prevent Covid-19 and other respiratory infections. Rev Lat Am Enfermagem, 28, e3353.
- MATUSCHEK, C., MOLL, F., FANGERAU, H., FISCHER, J. C., ZANKER, K., VAN GRIENSVEN, M., SCHNEIDER, M., KINDGEN-MILLES, D., KNOEFEL, W. T., LICHTENBERG, A., TAMASKOVICS, B., DJIEPMO-NJANANG, F. J., BUDACH, W., CORRADINI, S., HAUSSINGER, D., FELDT, T., JENSEN, B., PELKA, R., ORTH, K., PEIPER, M., GREBE, O., MAAS, K., GERBER, P. A., PEDOTO, A., BOLKE, E. & HAUSSMANN, J. 2020. Face masks: benefits and risks during the COVID-19 crisis. Eur J Med Res, 25, 32.
- Worby CJ, Chang H-H. Face mask use in the general population and optimal resource allocation during the COVID-19 pandemic. Nature communications. 2020;11(4049):1-9.

- World Health Organization: https://www.who.int/images/default-source/health-topics/coronavirus/
- Worldometer, Corona Virus https://www.worldometers.info/coronavirus/