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Airborne Transmission and WHO

NEW WHO GUIDANCE CALLS FOR MORE EVIDENCE ON AIRBORNE TRANSMISSION

- The World Health Organization (WHO) released new guidance on the transmission of the novel coronavirus acknowledging certain reports of airborne transmission; however, the agency stopped short of confirming that the virus spreads through the air.
- The agency further acknowledged that some outbreak reports pertaining to indoor crowded spaces point to the likelihood of aerosol transmission, such as during choir practice, in restaurants or in fitness classes.
- WHO stated that the coronavirus causing COVID-19 spreads through contact with contaminated surfaces or close contact with infected individuals who tend to spread the virus through saliva, respiratory secretions or droplets that are released when an infected person coughs, sneezes, speaks or sings.
- People should avoid crowds and ensure good ventilation in buildings, besides social distancing, and wear masks when physical distancing is not possible.
- The pandemic is driven by super-spreading events, and many of those events could best be explained by aerosol transmission.
- People without symptoms - to wear masks.
- Very few diseases are believed to be spread via aerosols, or tiny floating particles. These include measles and tuberculosis. These highly contagious pathogens can stay afloat in the air for hours and require extreme precautions to prevent exposure.
- WHO is using an outdated definition of droplets and aerosols and is focusing too much on the size of the droplets and the distance they travel. WHO defines aerosols as being <5 microns as only particles that small could float in the air long enough to be inhaled. However, Linsey Marr, an aerosol expert at Virginia Tech, said that a much larger range of particle size could contribute to infection. Rather than size, the differences between droplets and aerosols should be guided by how the infection occurs: If a person inhales the virus and becomes infected, it's an aerosol. If the infection occurs by contact, they are droplets. The WHO has focused on airborne transmission at long distances, but breathing in aerosols is of greater concern at close contact and when people are in the same room, says Marr. *(Reuters)*

PREDICTORS OF SURVIVAL IN COVID-19 PATIENTS TREATED WITH TOCILIZUMAB

- Administration of the interleukin (IL)-6 receptor antagonist tocilizumab within 12 days of symptom onset in patients with severe COVID-19

independently predicted in-hospital survival at 28 days, revealed a study published in the *Journal of Autoimmunity.*

- Patients were eligible for tocilizumab if they had persistent fever (38°C for >6 hours), had PaO_2/FiO_2 of <200, and exhibited persistently increasing inflammatory laboratory parameters (ferritin, D-dimer and lactate dehydrogenase [LDH]) or an elevated inflammatory laboratory parameter marked by ferritin ≥1,000 µg/L, D-dimer ≥5 mg/mL or LDH ≥500 U/L. An IL-6 level ≥5 times the upper limits of normal (≤5 pg/mL) was also evaluated.
- An 8 mg/kg IV dose of tocilizumab was administered using actual body weight with a maximum dose of 800 mg. Patients were given a second dose if persistently febrile despite treatment. Owing to medication shortages, tocilizumab dose was changed to a fixed 400 mg IV dose for all patients on March 30, 2020. All patients were followed for up to 28 days from the first dose.
- The 28-day in-hospital mortality was 43.2%, with 46 patients in the survivors and 35 in the nonsurvivors group. The sole independent predictor of 28-day in-hospital survival was receipt of tocilizumab within 12 days of symptom onset (adjusted odds ratio [OR]: 0.296, 95% confidence interval [CI]: 0.098-0.889). A sequential organ failure assessment (SOFA) score ≥8 had an independent association with 28-day in-hospital mortality (adjusted OR: 2.842, 95% CI: 1.042-7.753).
- Patients in the survivor group had higher odds of having a clinical response to the drug by Day 28 (80.4% vs. 5.7%; $p < 0.001$). Improvements in the six-point ordinal scale and SOFA score were evident in survivors after tocilizumab. The hospital length of stay was longer in the survivor group compared to nonsurvivors (27.5 days [14-31] vs. 14 days [9-20]; $p < 0.001$), while 14 (17.3%) patients remained hospitalized at the end of the study.

Source: https://www.sciencedirect.com/science/article/pii/S0896841120301347?via%3Dihub

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Loss of Smell Associated with Less Severe COVID-19 Infection

A study published in the *Annals of Allergy, Asthma & Immunology,* has revealed that loss of smell seems to be an independent positive prognostic factor of less severe COVID-19 infection.

The study enrolled 949 patients with COVID-19. The patients were assessed at Rush University Medical Center from February 1, 2020, through April 3, 2020. In all, 198 (20.9%) patients reported loss of smell. Anosmia was shown to have a significant association with younger age (mean age, 46 vs. 49 years; p = 0.02), female gender (64.7% vs. 52.8%; p = 0.003) and higher body mass index (33.6 vs. 31.5; p = 0.001).

Anosmia had a significant association with decreased hospitalization (odds ratio [OR] = 0.69), admission to intensive care unit (OR = 0.38), intubation (OR = 0.43) and acute respiratory distress syndrome (OR = 0.45). The results continued to be significant following further adjustment for allergic rhinitis and chronic rhinosinusitis.

Loss of smell was also associated with less lymphopenia and higher albumin levels, pointing to a less severe reaction to COVID-19 in patients with smell loss when compared with those with intact smell, suggested researchers.

Mean lymphocyte count was 1.84 ± 3.69 among patients with anosmia compared to 1.11 ± 0.81 among those without smell loss (p = 0.001). The levels of albumin were 3.02 ± 0.83 versus 2.77 ± 0.83, respectively (p = 0.02). Other laboratory values and inflammatory markers had no link with anosmia.

The study also revealed a significant association between anosmia and history of pre-existing smell dysfunction (OR = 4.66), allergic rhinitis (OR = 1.79) and chronic rhinosinusitis (OR = 3.70), in comparison with patients without loss of smell. *(DG Alerts Excerpts)*