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This Newsletter (NL) is the result of a partnership between the Instituto de Saúde Baseada na Evidência and the Cochrane Portugal, and aims to provide information on interesting areas for clinical practice, based on the best scientific evidence. The included studies are critically evaluated for their validity, importance of results and practical applicability, and summarized. Priority is given to causality studies, including, where warranted, qualitative and methodological studies, as well as scientific reviews. The content of NL is the sole responsibility of its author(s).

In post-hospitalization patients, surgical mask use increased dyspnea at rest and during a submaximal exercise test, but had no impact on cardiorespiratory response or exercise performance.

Reference: *Poncin W. et al. Impact of surgical mask on performance and cardiorespiratory responses to submaximal exercise in COVID-19 patients near hospital discharge: A randomized crossover trial. Clin Rehabil. 2022 Apr 27:2692155221097214. doi: 10.1177/02692155221097214*

Study Analysis: In a perspective of decreasing viral transmission during the entire period of the COVID-19 pandemic, the use of masks in hospitalized patients has been the norm. This measure has also been extended to the post-discharge rehabilitation period. The main objective of the present study was to analyze the impact of mask use on dyspnea, exercise capacity and cardiorespiratory response to isometric exercise (sequential repetitions from sitting to standing) in pre-discharge patients. The sample included 28 patients with a mean age of 52 ± 10 years, who underwent two sit-to-stand tests (in random order) with or without a surgical mask. The main results – measurements of dyspnea (by modified Borg scale), cardiorespiratory parameters and isometric exercise (sit and stand repetitions) were recorded before, at the end and after two minutes of recovery of each test.

The results indicated that, with a mask, dyspnea was significantly greater before and at the end of the sit-to-stand test - mean difference 1.0 95% CI [0.6 to 1.4] and 1.7 [95% CI 0 .8 to 2.6], respectively. The difference (mask vs. no mask) was not significant after the recovery period, and mask use had no impact on cardiorespiratory parameters, nor on the number of repetitions of the sit-to-stand exercise.

Practical Application: The authors conclude that, in post-hospitalization patients, the surgical mask increased dyspnea at rest and during a submaximal exercise test, but had no impact on cardiorespiratory response or exercise performance. Its use can therefore be maintained during physical or rehabilitation activities. A major limitation of this study is the small sample size.

In COVID-19 patients with severe pneumonia, Auxora appears to be effective and safe

Reference: *Bruen C et al. auxora vs. placebo for the treatment of patients with severe COVID-19 pneumonia: a randomized-controlled clinical trial. Crit Care 2022 Apr 8;26(1):101. doi: 10.1186/s13054-022-03964-8*

Study Analysis: This phase 2, randomized, double-blind, placebo-controlled clinical trial sought to assess the addition of Auxora - a CRAC (calcium-releasing channel) channel inhibitor - to corticosteroids in the treatment of adults with severe COVID-19 pneumonia. Eligible patients were adults with ≥ 1 symptom consistent with COVID-19 infection, a diagnosis of COVID-19 confirmed by PCR (or other) tests, and pneumonia documented by chest X-ray, receiving oxygen therapy by high or low flow nasal cannula at the baseline and have at the time of inclusion a PaO2/FiO2 ratio > 75 and ≤ 300 (calculated by a non-linear equation). Patients could not be on mechanical ventilation (non-invasive or invasive) at the time of study enrollment. The primary outcome was recovery time up to 60 days and the secondary outcomes were all-cause mortality at day 60 and day 30. Due to decreasing rates of COVID-19 hospitalizations and use of standard treatment drugs advised against by regulatory agencies, the study was interrupted before the end date.

The sample consisted of 261 patients with an imputed PaO2/FiO2 ratio of 200, 130 in the experimental group (EG, Auxora) and 131 in the control group (CG, placebo). Recovery time was 7 versus 10 days (P = 0.0979) for patients in the EG versus CG, respectively. The all-cause mortality rate at day 60 was 13.8% in the EG vs. 20.6% in CG (P = 0.1449). All other patient subgroups showed similar trends. In terms of safety, serious adverse events (respiratory failure, ARDS and pneumonia) were less frequent in patients treated with Auxora (n=34, 24.1%) than placebo (n=49, 35.0%) (P = 0.0616).

Practical Application: in COVID-19 patients with severe pneumonia, Auxora appears to be effective and safe. One of the limitations of this study was that it was finished earlier than expected.