OPINION

Dexamethasone use in COVID 19: An overview

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Dexamethasone is a corticosteroid with anti-inflammatory and immunosuppressive properties that is used to treat a variety of illnesses. In the UK's national clinical study recovery, it was examined in hospitalised patients with COVID-19 and found to provide benefits for critically ill patients. According to early findings shared with the World Health Organization (WHO) (and now available as a preprint), the medication was proven to lower mortality by about one-third in patients on ventilators and by about one-fifth in those who merely needed oxygen. The aetiology of Coronavirus Disease 2019 (Covid-19), Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), arose in China in late 2019 from a zoonotic source. The majority of Covid-19 instances are asymptomatic or cause relatively minor symptoms. However, a significant percentage of patients develop a respiratory ailment that necessitates hospitalisation. Such infections can lead to catastrophic disease, including hypoxemic respiratory failure that necessitates long-term ventilator care. The case fatality rate for patients with Covid-19 who were admitted to hospitals in the United Kingdom in the first half of 2020 was almost 26% overall, and more than 37% for those who were having invasive mechanical ventilation. Despite the fact that remdesivir has been found to reduce the time it takes for patients to recover in hospitals, no treatment medicines have been shown to lower mortality. An initial pneumonic process with substantial radiologic opacity and, on autopsy, diffuse alveolar destruction, inflammatory infiltrates, and other pathophysiological characteristics characterise severe Covid-19. The host immune response is thought to play a crucial role in the pathogenesis of organ failure in other severe viral pneumonias, such as highly pathogenic avian influenza, severe acute respiratory syndrome, and pandemic and seasonal influenza. Inflammatory organ harm can develop in severe Covid-19, with inflammatory markers such C-reactive protein, ferritin, interleukin-1, and interleukin-6 being significantly raised in a subset of individuals. Several treatment strategies have been recommended to reduce inflammatory organ harm in viral pneumonia. Although one small experiment found that giving methylprednisolone to individuals with Covid-19 improved their clinical results, the lack of reliable information from large-scale randomised clinical studies leaves the usefulness of glucocorticoids in patients with Covid-19 unclear. Many treatment guidelines for such patients have suggested that glucocorticoids are either contraindicated or not advised, despite the fact that in China, glucocorticoids are prescribed for severe instances. However, during the first six months of the pandemic, treatment practises varied greatly around the world: in some studies, up to 50% of patients were given glucocorticoids. Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Illness (MERS), severe influenza, and community-acquired pneumonia, all of which are strongly connected to Covid-19, have all been treated with glucocorticoids. However, due to a paucity of data from appropriately powered randomised, controlled studies, the evidence to support or discourage the use of glucocorticoids in these situations has been inadequate. Furthermore, there is variation in glucocorticoid dosages, medical conditions, and disease severity, which has harmed the evidence base. It's likely that glucocorticoids' positive effect in severe viral respiratory infections is contingent on the correct dose being given at the right time to the right patient. High doses, as well as medication provided at a period when viral replication is paramount and inflammation is minimal, may be more damaging than helpful. Patients with Severe acute respiratory syndrome, Middle East respiratory illness, and influenza who were treated with systemic glucocorticoids had a slower clearance of viral RNA. However, the clinical implications of these observations are uncertain. Unlike Severe acute respiratory syndrome, when viral replication peaks in the second week of illness, SARS-CoV-2 appears to shed more viruses early in the illness and then falls. Dexamethasone provides a higher mortality benefit in patients with Covid-19 who are on respiratory support. According to those who were recruited after the first week of their sickness, the disease may be dominated by immune-pathological factors at that point, with active viral replication playing a secondary role. This hypothesis suggests that the efficacy of dexamethasone in Covid-19 patients should not be extrapolated to patients with other viral respiratory infections with a distinct natural history. Corticosteroids (i.e. dexamethasone, hydrocortisone, or prednisone) should be given orally or intravenously to patients with severe and serious COVID-19, according to World Health Organisation. WHO advises against the use of corticosteroids in the treatment of patients with non-severe COVID-19, unless the patient is already taking this medication for another condition. The drug should be taken once a day for seven to ten days. Daily dose should be 6 mg of dexamethasone, equivalent to 160 mg of hydrocortisone (i.e. 50 mg every 8 hours or 100 mg every 12 hours), 40 mg of prednisone, 32 mg of methylprednisolone (8 mg every 6 hours) (8 mg every 6 hours). Eligible patients were assigned to one of many treatment groups at random. In one of the arms, dexamethasone was given as an oral (liquid or tablet) or intravenous preparation at a dose of 6 mg once day for 10 days. In pregnancy or breastfeeding women, patients were randomized to prednisolone (a milder corticosteroid) 40 mg administered by mouth. Dexamethasone is generally considered to be safe. It has a favourable benefit-risk profile, especially in individuals with severe pneumonia, although the benefit is less significant in people with less severe pneumonia. Corticosteroids are not associated with major side effects because the treatment is brief, even at large doses. Hyperglycaemia (excess blood glucose) is a transient condition. Long-term use has been linked to glaucoma, cataracts, fluid retention, hypertension, psychological effects (such as mood swings, memory problems, disorientation, or irritability), weight gain, and an increased risk of infections and osteoporosis. All of these side effects are unrelated to short-term use (with the exception of hyperglycaemia that can worsen diabetes).

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