

Worrying situation regarding the use of dexamethasone for COVID-19

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The World Health Organization (WHO) recently approved the preliminary clinical trial findings on the beneficial use of dexamethasone in treating critically ill patients with coronavirus disease 2019 (COVID-19).¹ Dexamethasone reduced mortality by one-third in patients on ventilators and by one-fifth in patients receiving oxygen only, however, this benefit was not found in patients with milder disease who did not require respiratory support.² Dexamethasone, a synthetic corticosteroid, acts as a broad-spectrum immunosuppressor which has greater activity (30 times) and longer duration of action (2–3 days) than cortisone. Dexamethasone will inhibit the generation and destructive effects of cytokines and therefore is considered useful in COVID-19-related hyperinflammation or cytokine storm. This situation is frequently observed in patients with comorbidities, including diabetes, hypertension, chronic respiratory diseases, and cardiovascular and cerebrovascular diseases, who have a higher risk of developing severe COVID-19 with complications, such as acute respiratory distress syndrome and multiorgan failure.^{3–8} Against this however, dexamethasone will also limit the protective function of T cells, hinder antibody production of B cells, and prevent the macrophage clearance mechanism, possibly resulting in higher plasma viral load and a greater risk of secondary infections. Hence, it may only be useful for selective cases, such as in patients with severe, intubated COVID-19, and cannot be a generalized treatment for all patients.⁹

In healthcare facilities, dexamethasone is one of those medications that are regularly prescribed in both inpatient and outpatient departments. Its anti-inflammatory activity is generally useful in treating various conditions, including allergy, asthma, arthritis, inflammatory bowel disease, and cancer metastasis or exacerbation. However, it also has numerous side effects, such as fluid

retention, weight gain, and elevated blood sugar levels, and some serious complications, especially when used long term. Certain patients, such as those who have an autoimmune condition, require regular consumption of corticosteroid in initial and maintenance doses. Without these drugs, they risk relapse or flare, a period of worsening and intensification of symptoms.¹⁰ Furthermore, in people with steroid dependency, sudden cessation of these prescriptions may result in adrenal insufficiency and ultimately adrenal crisis, a life-threatening condition.¹¹

The influence of the media in disseminating information is enormous and thus should not be misleading. Recent guidelines or protocols have not included the routine use of systemic corticosteroids in the treatment plan for patients with COVID-19 pneumonia.^{12,13} However, following the aforementioned report from the WHO¹ regarding the randomized evaluation of COVID-19 therapy trial on dexamethasone (RECOVERY),² a small proportion of the population caused a panic-buying situation when they tried to reserve dexamethasone for personal use in case they contracted severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). As dexamethasone is easily accessible and affordable and can even be obtained without doctor's prescription, some people may want to use it for self-medication. In fact, dexamethasone is neither an antiviral nor a definitive cure for COVID-19, while the use of such immunosuppressants in healthy individuals will actually weaken their immunity and result in susceptibility to the virus and other infections.

This worrying situation occurs in Indonesia, where the price of dexamethasone could increase substantially and become difficult to obtain for those who really need it. Earlier in the beginning of the pandemic, several items of protective

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equipment, such as masks, gowns, sanitizers, and disinfectants became scarce and were sold at extremely inflated prices. In such unforeseen circumstances, healthcare providers can switch to other corticosteroids, such as methylprednisolone, as an alternative that will be prescribed for patients in need. To date, Indonesia has recorded the highest number of confirmed cases and fatalities in Southeast Asia,¹⁴ and this alarming situation must not be exacerbated by unnecessary consumption of dexamethasone. Whether dexamethasone can be used as prophylaxis for COVID-19 or otherwise increases the vulnerability to SARS-CoV-2 is currently unknown and requires further investigation. However, the handling of information by the media must be trustworthy and this undesirable condition should not be replicated elsewhere.

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Michael Anthonius Lim: Conceptualization; Project administration; Resources; Writing-original draft; Writing-review & editing.

Raymond Pranata: Conceptualization; Validation; Writing-review & editing.

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