شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

HANAA ALY

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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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Colchicine as a potential therapeutic option in COVID – 19 hospitalized patients

Thesis

Submitted for Partial Fulfillment of Master Degree in Chest Diseases

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Mervat Abdelbaset Ahmed

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List of Abbreviations

Abb.	Full term
ABCB1	ATP-binding cassette subfamily B member 1
ACIP	Advisory Committee on Immunization Practices
ARDS	Acute respiratory distress syndrome
CDC	Centers for Disease Control and Prevention
COVID-19	Coronavirus Disease 2019
CYP	Cytochrome P450
CYP3A4	Cytochrome P3A4
DM	Diabetes multiuse
EUAs	Emergency Use Authorizations
FDA	Food and Drug Administration
FiO2	Fraction of inspired oxygen
HMG-CoA	3-hydroxy-3-methy-glutaryl coenzyme A
IA	Iatrogenic allogenosis
ICU	Intensive care unit
IL	Interleukin
IMV	invasive mechanical ventilation
MDR1	Multi-drug resistant protein 1
MIS-C	Multisystem inflammatory syndrome in children
NAAT	Nucleic acid amplification test
NIV	Non invasive mechanical ventilation
PaO2	Arterial partial pressure of oxygen
PCR	Polymerase chain reaction
P-gp	P-glycoprotein
PPE	Personal protective equipment
RIG-I	Retinoic acid-inducible gene I
SOC	Standard of care
SpO_2	oxygen saturation

List of Abbreviations Con...

Abb.	Full term
TLR	Toll-like receptor proteins
TNF	Tumor necrosis factor
VEGF	Vascular endothelial growth factor
VoC	Variants of concern
VoI	Variants of interest
WHO	World Health Organization

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INTRODUCTION

SARS-CoV-2 infection and the mortality associated with the acute respiratory distress syndrome (hereafter referred to as ARDS) poses a global public health challenge ***(Huang et al., 2020).*** It exceeds two and a half million infections worldwide with a mortality rate that is greater than 7.08%. The increase in the spread and associated mortality poses a scenario where cost-effective therapeutic options to control the epidemic and decrease the number of deaths are urgently recommended to the international scientific community. Several reports show that the common final event that increases mortality from COVID-19 infection is ARDS, which results from an unmodulated inflammatory response and leads to death ***(Huang et al., 2020; Goh et al., 2020).***

It has been a challenge to identify targets where drugs will be useful for controlling and treating the new coronavirus COVID-19 infection. Currently several potential drugs are used at different stages of the disease; however none of the therapies have been proven to be completely effective to date ***(Sanders et al., 2020).*** One possible useful drug is colchicine, a molecule commonly used to treat different diseases such as gout and some autoinflammatory syndromes such as Adult-onset Still's disease, Behcet's disease or familial Mediterranean Fever as well cardiac conditions, etc. ***(Slobodnick et al., 2018).***

Colchicine has been used for more than 10 years for symptomatic treatment of patients with iatrogenic allogenosis (IA), a disease caused by allogenic substances like modeling agents or biopolymers that are foreign to the body ***(Coiffman, 2008).*** Colchicine decreases the symptoms these patients have that are associated with inflammatory response, and some clinical manifestations such as arthralgia, headache, and pulmonary infiltrates. These patients experience clinical improvement, and the manifestations decrease in frequency.

In the light of current information, a summary of recent knowledge about colchicine mechanisms of action and metabolic pathways that might explain the immunomodulatory effects that lead to preventing ARDS associated with COVID-19 infection and its possible effects on viral replication and antigen presentation are presented.

AIM OF THE WORK

To compare the role of colchicine as a potential therapeutic add-on option in COVID – 19 confirmed cases in addition to the standard of care versus the standard of care alone.