

Potential Role of Semaglutide in Treatment of Covid-19 Infection

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Opinion

Coronavirus disease 2019 (Covid-19) is a very serious, contagious, and infectious disease that cause severe acute respiratory syndrome. It has four structural base proteins: envelope (E), nucleocapsid (N), membrane (M) and spike (S) protein which is responsible for the viral attachment, fusion, and entry [1]. The disease co-morbidities include hypertension, diabetes, cardiovascular disease, and cancer [2]. CoVID-19 infections can be either asymptomatic or associated by fever, cough, shortness of breath and gastrointestinal irritation, severe pneumonia and even death in elderly and immunocompromised patients [3]. It is well known and well documented now in the literature that covid-19 beside it is direct viral damage it cause uncontrolled inflammation called cytokine storm that participate well in disease severity and pathogenesis and this is explained by the high serum level of inflammatory cytokines like serum interleukin (IL)-6, IL-8, tumor necrosis factor (TNF)- α and IL-1 β and this could justify the use and the research of new anti-inflammatory drugs to help in the management of the disease [4]. Glucagon like peptide (GLP-1) is a postprandial hormone released upon a carbohydrate rich meal to stimulate glucose dependent insulin secretion, decrease glucagon secretion, and gastric motility, and increase satiety. In patients, long-acting GLP-1 receptors analogues (GLP-1Ras) such as liraglutide and semaglutide have been used for treatment of type 2 diabetes mellitus (T2DM), and obesity and are known to decrease cardiovascular disease and chronic kidney disease in people with T2DM [5].

Semaglutide is a GLP-1RAs which leads to insulin secretion and lowers inappropriately high glucagon secretion in a glucose-dependent manner, thereby improving glycemic control and it is also associated with body-weight reductions in patients who also experience lipid and blood pressure reductions with GLP-1Ras also several GLP-1RAs have been reported to reduce the risk of CV events [6]. It was reported in the literatures that usage of the GLP-1 acting drugs like semaglutide in animal models had shown profound anti-inflammatory and immune-regulation activities by reducing circulatory inflammatory cytokines like IL-1 β , IL-6 Nuclear factor K α (NF- κ B) [7,8]. It was also reported in literature that semaglutide decreased serum level of TNF- α , INF- γ and reducing monocytes infiltration by reducing monocyte chemoattractant protein-1, which is an inflammatory chemokine produced by immune system cells, that mediates monocyte recruitment from the circulation to sites of inflammation along with beside reducing C reactive protein in nondiabetic patients [9]. It was also reported that semaglutide attenuate vessel remodelling due to it is anti-inflammatory effect [10]. Therefore, and based on the previously mentioned facts it would be of a great importance to test the effect of semaglutide alone or in combination with other drugs in the treatment of covid-19 patients due to it is anti-inflammatory and immunomodulation effect as these effects would help in the lessen of the inflammatory cytokine storm associated with covid-19 infection and the one is responsible for the major complication of the covid-19 infection.

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