

Metformin use among patients with Covid-19

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Diabetes mellitus is associated with poor prognosis and high mortality during Covid-19; optimal blood glucose control is the cornerstone when infected with this lethal rapidly spreading virus. The biguanide metformin is the first line antidiabetic medication that showed promising effects among diabetic patients infected with Covid-19 [1]. Metformin exerts an immunomodulatory mechanism and may reduce mortality among obese women infected with Covid-19, a recent study concluded [2], another study showed that metformin suppress the interleukin-6 induced inflammatory and thrombotic effects of particulate matter air pollution in the lung (namely the mitochondrial ROS/Ca²⁺ release-activated Ca²⁺ channels (CRAC)/IL-6 cascade) [3]. A retrospective analysis conducted in China showed a lower mortality among metformin compared to their counterparts not on metformin with no differences in hospital stay [4], a larger analysis included 25,326 subjects at the University of Alabama at Birmingham Hospital, a tertiary health care center in the racially diverse Southern U.S showed similar findings [5]. However, a Case Safety Reports including 10,771 individuals with Covid-19 found an increasing rate of completing suicide when metformin is used with hydroxychloroquine [6]. Esam and colleagues stated that metformin, as a strong base, a potential regulator of Vacuolar ATPase and endosomal Na⁺/H⁺ exchangers, may exert a regenerative agent for lung fibrosis, and could play a role in acute, chronic and recovery phases of COVID-19 [7]. Caution may be required because a firm conclusion cannot be withdrawn from the above retrospective studies; furthermore, it is wise to discontinue metformin and sodium glucose co-transporters inhibitors (SGLT-2i) among patients with severe Covid-19 due to the risk of ketoacidosis and lactic acidosis [8].

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