

A Suggestion on Ethanol Therapy in COVID-19?

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The world emergence pandemic of respiratory disease caused by new coronavirus named COVID-19 is a viral disease that may cause cytokine storm condition [1,2]. To overcome this fatal emerged situation many off-label drugs have been tried and there is not found any specific medication, yet. One off-label drug which could be use in a clinical trial is ethanol. The major basis behind the proposal of ethanol therapy in COVID-19 is related to its immunomodulatory effects on cytokine storm in this disease [3]. It reduces the inflammatory response and decreases LTR 2, 4, 8, 9 and IL 6 to modify the innate immune system [4,5]. The second part of efficacy of this medication is inhibitory property of ethanol on RNA polymerase respond to virus replication [6,7]. And the third reason, ethanol could involve directly with the bilayer lipid capsule of the coronavirus [8-10]. Other therapeutic effects of ethanol: bronchodilation, decreased work of breathing, anti-cough effects, sedation, and mucolytic properties. Bimodal ethanol therapy (inhalation and intravenous infusion) helps to kill the virus in two directions: a) blood-to-alveolar direction; b) upper-to-lower airway direction. A lot of researches on ethanol therapy were previously conducted in the field of methanol intoxication [11], fat embolism [12], preterm labour [13], pre-eclampsia [14], AF ablation [15], pulmonary edema [16] and many more [17,18]. The safety of ethanol therapy have been showed in all of these researches. To investigate this idea, at first, need to design a clinical trial cohort study with ethanol 70% as an intervention to treat COVID19. In this method, 50 ml ethanol 70% per half a liter of dextrose 5% is administered à 12 hrs. At the same time, if the patient is under mechanical ventilation, 50 ml of ethanol 70% can be poured into a humidifier [19]. If the patient is breathing spontaneously through an oxygen mask, 25 ml ethanol would be added to the oxygen flowmeter water tank. Treatment plan continues five days. Along with vital signs, also circulatory, respiratory, and consciousness of patients must be monitored. The cumulative administered ethanol in two these ways is less than FDA permission dosage [20]. The inflammatory parameters like IL6, CRP, ESR, LDH, WBC, lymphocytes etc. have to investigated in both case and control groups. There is a case series unpublished report of ethanol therapy in COVID-19 via intravenous and inhalation manner. It caused improvement in oxygenation and decreased duration of hospitalization, need to tracheal intubation and mechanical ventilation. It has reduced the mortality rate from about 14% to 2%. Altogether, it is worth it to conduct research on it.

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