

Short Communication

Immunization by Self-Attenuated Severe Acute Respiratory Syndrome Coronavirus 2

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Abstract

Severe acute respiratory syndrome coronavirus 2 (SARS CoV-2) pandemic needs an extensive immunization at the cost of inadequate resources. Immunization could lead us to that target. For immunization, we need attenuated SARS CoV-2. Heated Sodium Chloride (NaCl) particles have the potential to deactivate the viruses in the lungs. Self-attenuation of SARS CoV-2 by inhaling the heated NaCl particles in the pulmonary system may bring us self-immunization.

Keywords: Severe acute respiratory syndrome coronavirus 2 (SARS CoV-2); COVID-19; Immunization; Vaccination; Self-attenuation; NaCl

Introduction

SARS CoV-2 causing COVID-19 infection has become the pandemic. Global cases with COVID-19 infection are uncontrollable. Possibility of airborne transmission of SARS-CoV-2 is still not clear [1]. Other modes of transmission of SARS CoV-2 by means of direct, indirect (fomite transmission) connection with an infected person cannot be discontinued a hundred percent in general. Implementing control measures like detecting odd cases, testing, and isolating infectious cases, quarantine will not go in the long run [2]. Asymptomatic SARS CoV-2 infected persons have also contributed in disease transmission [3]. So here is a clear need for global immunization against COVID-19 infection.

Immunization against SARS CoV-2 is the best possible solution to break the COVID-19 pandemic. The ideal way to immunize a person against COVID-19 is by getting vaccinated with attenuated SARS CoV-2. Here I would like to propose self-attenuation of SARS CoV-2 by a COVID-19 infected patient that may lead self-immunization [4].

Self-attenuation by Heated NaCl Particle

NaCl can deactivate viruses [5,6]. High temperature enhances the virus deactivation by NaCl. Heated NaCl inactivated the Foot and Mouth-Disease Virus (FMDV), Classical Swine Fever Virus (CSFV), Swine Vascular Disease Virus (SVDV) and African Swine Fever Virus (ASFV) [6-8]. The increasing level of NaCl inactivates herpes simplex virus-1, murine gammaherpesvirus 68, respiratory syncytial virus, influenza A virus, coxsackievirus B3 viruses including human coronavirus 229E [9]. Inactivation was mediated by chloride ion and hypochlorous acid. So, SARS CoV-2 could also be inactivated by heated NaCl particles.

Although science has many drugs/disinfectants that can inactivate SARS CoV-2, but the mode of drug administration is always a

challenge. Inhalation of heated dry NaCl crystal particle through the mouth by using inhaler would be a good drug administration approach [10]. Do not confuse with salt gargling and NaCl steam inhalation (in case of asthma). Antiviral drugs were delivered by inhalation [11,12]. NaCl particles can be inhaled to the lungs [13,14]. Lungs are primarily affected by SARS CoV-2 [15].

Attenuated SARS CoV-2 will act as an immunogen and capable of generating antibody/memory cells against it. Moreover, NaCl also regulates type I interferon production and signaling interceded by the p38 MAPK/ATF2/AP1 signaling pathway [16].

Conclusion

Inhaling drily heated NaCl particle may attenuate the SARS CoV-2 in the pulmonary system and that may consequence in developing an immune system against COVID-19. In the world scenario, we need a cost-effective solution of COVID-19 pandemic.

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Citation: Gupta M. Immunization by Self-Attenuated Severe Acute Respiratory Syndrome Coronavirus 2. *Ann Respir Circ.* 2020;1(1):1001.

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Publisher Name: Medtext Publications LLC

Manuscript compiled: Aug 25th, 2020

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