ISSN: 2643-4466

Scherlag et al. Int Arch Intern Med 2020, 4:027
DOI: 10.23937/2643-4466/1710027
Volume 4 | Issue 2
Open Access

International Archives of Internal Medicine

COMMENTARY ARTICLE

A Potential Non-Invasive Therapy to Treat COVID-19, As Yet Unrecognized in the Medical Literature

Benjamin J Scherlag, PhD*, Ronald A Scherlag, BS, MBA and Sunny S Po, MD, PhD

Department of Medicine, University of Oklahoma Health Sciences Center, USA

***Corresponding author:** *Benjamin J Scherlag, Professor of Medicine, Department of Medicine, University of Oklahoma Health Sciences Center, 800 Stanton L. Young Blvd, Suite #5400, Oklahoma City, OK 73104, USA*

As the pandemic rages across the globe, we await the proven safe and effective vaccine that will turn the tide against the novel coronavirus SARS-CoV-2 (a.k.a. COVID-19) spread. In the meantime, a number of pharmaceutical agents have been the subject of studies including, Hydroxychloroquine, Remdesivir, Dexamethasone, among others with varying degrees of clinical efficacy. Hidden from the medical literature is the evidence gathered by investigators for more than a decade that negative air ions can inactivate coronaviruses.

Mitchell and King [1] performed experiments to determine the effect of negative air ions on airborne transmission of Newcastle disease virus in chickens. The use of negative air ion generators significantly reduced transmission from donor chickens with viral infection to susceptible chickens that were not inoculated with the virus.

Susuki and Kobayashi [2] used a specially designed ion generator that produced both positive as negative ions as a result of a plasma discharge (plasmacluster ions) determined by spectroscopy. These ions surrounded airborne micro-particles like fungal spores or viruses creating highly reactive OH-negative ions that inactivated the various infectious particles. Electron microscopic observations indicated that plasmacluster ion treatment was associated with decomposed virus fragments.

In a recent publication, we developed an apparatus that induced a negative ion atmosphere and elaborated on the mechanism of action by which hydroxyl, OH- attaches to the positively charged protein at the end of the viral spikes [3]. It is well known that the viral spikes represent the modus operandi for virus attachment in body cells allowing injection of the virus's DNA. Subsequent control of the cell's genetic machinery results in producing more viruses to over whelm organ function.

It is interesting to note that a recent publication by Liu, et al. [4] collected antibodies from infected individuals. Epitope mapping showed that this collection of 19 antibodies were equally divided between those directed to the Receptor binding domain (RBD) and those to the N-terminal domain (NTD) indicating that both of these regions at the top of the viral spike are immunogenic. In addition neutralizing monoclonal antibodies were tested in a hamster model of SARS-Cov-2 infection. Initially the animals were injected with the injection of the antibody. Twenty four hours later, the virus was introduced through an intranasal inoculation. Four days later lung tissue was harvested to quantify the viral load. Results showed significant potency of the monoclonal antibody protection. Thus these studies support the targeting of the N-terminal domains by both the monoclonal antibodies and the negative air ions for inactivating the infectious ability of coronaviruses.

In the same way, *in vitro* findings of the actions of negative air ions have been supported by animal studies. Duan, et al. [5] studied the kinetics of inhaled water generated negative air ions or steam produced by a conventional nebulizer, both of which were labeled with 3H-thymidine in mice. The radioisotope was found in the alveoli of mice that inhaled water air ions, but not in the mice that inhaled steam indicative of the ability

Citation: Scherlag BJ, Scherlag RA, Sunny SP, MD, PhD (2020) A Potential Non-Invasive Therapy to Treat COVID-19, As Yet Unrecognized in the Medical Literature. Int Arch Intern Med 4:027. doi.org/10.23937/2643-4466/1710027

Received: August 20, 2020: **Accepted:** September 03, 2020: **Published:** September 05, 2020

of negative air ions to reach the lungs and potentially enter the blood, as gases are exchanged.

Another more practical aspect for the recognition of the potential role of negative air ions relates to the importance and at times problematic use of masks to prevent person to person spread by virus in air droplets Masks are effective when worn but become of no use when they are removed for eating and drinking, for example. The internet is replete with negative air ion generators in the form of necklaces which can emit as few as 2 million or as many as 20 million ions per second. Such personal devices can serve as a second line of defense for the general public but more importantly for health care personnel.

Finally, the protection provided by negative air ions can be extended to large groups of people by attaching the appropriate generators to existing Heating/Ventilation/Air Conditioning (HVAC) systems. In fact, two universities (John Hopkins and the University of Oklahoma) have already installed these industrial sized units for dorm rooms and residence halls [6,7].

Funding Source

Supported by an unrestricted grant from the Helen and Wilton Foundation through the Oklahoma University Research Foundation.

References

1. Mitchell BW, King DJ (1994) Effect of negative air ionization on airborne transmission of Newcastle disease virus. Avian Dis 38: 725-732.
2. Susuki T, Kobayashi N (2004) Plasmacluster ions inactivate an airborne coronavirus: A world first verification research conducted jointly with the Kitasato Institute. Sharp Company.
3. Scherlag BJ, Scherlag RA, Po SS (2020) Apparatus for generating negative air ions: Inactivation of coronaviruses. Lett Health and Biol Sci 5: 1-3.
4. Liu L, Wang P, Nair MS, Yu J, Rapp M, et al. (2020) Potent neutralizing antibodies directed to multiple epitopes on SARS-CoV-2 spike. Nature.
5. Duan HJ, Gao f, Oguchi K, Nagata T (1994) Light and electron microscopic radioautographic study on the incorporation of 3H-thymidine into the lung by means of a new nebulizer. Arzneimittelforschung 44: 880-883.
6. Business Insider (2020) Used in large-scale ventilation systems worldwide, bipolar ionization could be a secret weapon in the war against COVID-19.
7. OU to Install specialized microbe-fighting devices in residence hall rooms, University of Oklahoma, June 12, 2020.