

## A unique low-cost device to disinfect the SARS-CoV-2 virus in the expired air of COVID-19 patients

**Sreemanti Bag**

*Ujjivan Multispeciality Hospital, India*

Statement of the Problem: COVID -19, declared by the world health organization as a global pandemic, seems to be the deadliest curse mankind has encountered in recent times.

In spite of the popular preventive techniques like:

- Wearing a mask
- Hand washing by soap or hand rubbing with alcohol-based sanitizer
- Maintaining social distancing
- Vaccination
- Personal protective kits for health care workers
- Coughing or sneezing into bent elbows
- Avoiding crowd
- Keeping rooms well ventilated

The pandemic is still on surge and the fatality of the disease is rising day by day. The doctors and the healthcare workers are at the highest risk of infection while serving the COVID -19 patients. The SARS-CoV-2 is mainly transmitted through respiratory droplets and aerosols e.g. coughing and sneezing of an infected person. So, the expired air of the COVID patient is essentially required to be disinfected in the hospital wards, ICUs, and safe home facilities.

Clinical Practice: The working principle of the device is based on the fact that SARS-CoV-2 virus can be effectively eliminated by passing the infected patient's expired air serially through alcohol (70-80% solution of ethanol/propanol) mist chamber followed by

soap water solution, ensuring minimum time of interaction i.e. 20 sec. with each component and then finally the virus free expired air is exposed to the surrounding environment.

### **Conclusion & Significance:**

From otorhinolaryngological point of view, the device was initially targetted for safe post operative care of tracheostomized COVID-19 patients. The device subsequently has been modified to be equally effective for patients on ventilator support, on NRBM, with an oxygen face mask, or those patients breathing on their own, without any external source of oxygen supply.

### **Recent Publication**

Sreemanti Bag, Md. Quaisar Rahaman, Rajiv Singh, Chiranjib Das, Dwaipayan Mukherjee, Sumit Kumar Basu, Role of a Unique Innovative Device (HEAR-O-SCOPE) in Prevention of Noise Induced Hearing Loss : Vol. 29 No. 1 (2021): Bengal Journal of Otolaryngology and Head Neck Surgery

### **Biography**

Dr Sreemanti Bag received the M.B.B.S. (BACHELOR OF MEDICINE, BACHELOR OF SURGERY) degree from the West Bengal University of Health Sciences, KOLKATA, INDIA in 2016. She received MS ( Master of Surgery ) in Otorhinolaryngology from West Bengal University of Health Sciences, KOLKATA,INDIA in August 2021 and is now practising as an Otorhinolaryngologic surgeon in Ujjivan Multispeciality Hospital in the city of Kolkata. Since her postgraduate days she has been engaged in many research projects, paper,poster and case presentations for which she has won both national and international level acclaim.

drsreemanti@gmail.com