

An Innovative Equipment for ICU Infection Control

Authors : Ankit Agarwal

Abstract : Background: To develop a fully indigenous equipment which is an innovation in critical care, which can effectively scavenge contaminated ICU ventilator air. Objectives: Infection control in ICUs is a concern the world over. Various modalities from simple hand hygiene to costly antibiotics exist. However, one simple and scientific fact has been unnoticed till date, that the air exhaled by patients harboring MDR and other microorganisms, is released by ventilators into ICU atmosphere itself. This increases infection in ICU atmosphere and poses risk to other patients. Material and Methods: Some parts of the ventilator are neither disposable nor sterilizable. Over time, microorganisms accumulate in ventilator and act as a source of infection and also contaminate ICU air. This was demonstrated by exposing microbiological culture plates to air from expiratory port of ventilator, whereby dense growth of pathogenic microorganisms was observed. The present prototype of the equipment is totally self-made. It has a mechanism of controlled negative pressure, active and passive systems and various alarms and is versatile to be used with any ventilator. Results: This equipment captures the whole of contaminated exhaled air from the expiratory port of the ventilator and directs it out of the ICU space. Thus, it does not allow contaminated ventilator air to release into the ICU atmosphere. Therefore, there is no chance of exposure of other patients to contaminated air. Conclusion: The equipment is first of its kind the world over and is already under patent process. It has rightly been called ICU Ventilator Air Removal System (ICU VARS). It holds a chance that this technique will gain widespread acceptance shall find use in all the ventilators in most of the ICUs throughout the world.

Keywords : innovative, ICU Infection Control, microorganism, negative pressure

Conference Title : ICACCM 2014 : International Conference on Anesthesiology and Critical Care Medicine

Conference Location : Bangkok, Thailand

Conference Dates : December 18-19, 2014