Ventilator Associated Pneumonia in ICU: Is there an alternative to Antibiotics

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VAP is a common finding in ICUs the worldover. Many a times, a patient is admitted to the ICU for a particular disease, but requires to be put on Ventilator. While the primary admitting condition might resolve but if the patient develops VAP, it puts a lot of burden on the recovery of the patient as well as the healthcare system. Once VAP develops, a host of costly antibiotics are required, which besides having various derogatory effects, are very costly. The cost of which are borne either by the patient, or the hospital, or an insurance agency, or the State, depending on the Country.

Besides this, the main concern in the use of antibiotics is that commonly the organisms causing VAP are MDR. Further, no new antibiotic is expected to be available in near future.

So what can be done in such a situation? Shall we keep depending on antibiotics? Shall we still be in an indecisive state when microbial sensitivity report turns out to be negative for all the organisms? Or is there an alternative to antibiotics?

Objectives: It was aimed to find out that is there an alternative to antibiotics for prevention of VAP

Methods: It was hypothesised that same ventilators are used over and over again in different patients. Further, some parts of the ventilator are neither sterilisable nor disposable. So the ventilators might be acting as a source of infection to vulnerable and unsuspecting patients.

Blood agar plates were exposed to air coming directly from ventilator tubes for 10 minutes each. Plates were incubated and the colonies that developed were counted and identified. Further the plates were exposed to air after being bubbled through a solution.

Results: All the plates exposed to air directly coming through ventilators showed growth of bacteria ranging from <10 to >300 colonies per plate. Majority of the ventilators showed growth of drug resistant. Acinetobacter, Pseudomonas, Klebsiella and staphylococci. The number of colonies developed was proportional to be the duration of use of ventilators. The plates exposed after bubbling through solution did not show any growth of microorganisms.

Conclusions: The ventilators themselves act as a source of infection in causing VAP and bubbling the ventilator air through solution prevents VAP and provides an alternative to use of antibiotics in ICU.

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