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Earlier appropriate antibiotics treatment of ventilator associated Tracheobronchitis: Now or wait?

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Ventilator-associated tracheobronchitis (VAT) may be a presursor to ventilator-associated pneumonia (VAP). Studies have demonstrated that patients diagnosed with VAT have increased ventilator days, length of intensive care unit stay and associated healthcare costs. Initiating early targeted antibiotic treatment may improve patient outcomes and prevent VAP. Intravenous and/or aerosolized antibiotic therapy for VAT has been shown to reduce VAP and improve outcomes. Nseir and coworkers showed that appropriate antibiotic therapy was the only risk factor independently associated with reduced risk of transition to VAP (p=0.009). Bouza and coworkers conducted a study where 40 patients were randomized to a 3-day course of linezolid and meropenem versus 38 control patients. The antibiotic treated group had significantly lower rates of VAT/VAP and a longer time to the first episode of VAT/VAP (9 vs 4.5 days, p=0.02). Data from several randomized clinical trials and a meta-analyses support the use of pre-emptive, appropriate antibiotic therapy for VAT to reduce progression to VAP and improve clinical outcomes. Our hospital is one of the sites to conduct the clinical trials of aerosolized amikacin and fosfomycin delivered via the eFlow inline nebulizer system in mechanically ventilated patients. Assessing serial endotracheal aspirate cultures allows identification of bacterial pathogens and antibiotic sensitivity needed to initiate appropriate, "targeted" intravenous and/or aerosolized antibiotic therapy, especially for infections due to *S. aureus, P. aeruginosa, Acinetobacter species* or other multi-drug resistant Gram-negative pathogens. We recommend use of pre-emptive, appropriate antibiotic therapy for VAT be considered a new "standard of care".

Biography

Yuxiu Lei has completed her PhD in Chemical Physics in 2002 from University of Puerto Rico and Postdoctoral studies from University of Pennsylvania and University of Kentucky. She has completed a master of art in clinical investigation from Boston University School of Medicine. She has published more than 15 papers in chemistry and physics journals and more than 15 papers in medical journals. She is a clinical research scientist and biostatistician at Lahey Hospital and Medical Center.

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