A301 - Infusion of antiseptic in an oral model. An innovative technique for possible prevention of ventilator associated pneumonia

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Introduction:
Pathogenesis of ventilator-associated pneumonia (VAP) relies on colonization and microaspiration. Oral topical decontamination reduced the VAP incidence from 18 to 13%. [1] The persistence of antiseptic effect in the oral cavity is questionable; we hypothesize that continuous oral antiseptic infusion may offer a better decontamination.

Aim of the work: We developed endotracheal tube that allows continuous oral infusion of chlorhexidine (CHX), and we want to test the technique versus the conventional on bacterial colonization. (Provisional patent: 62359944)

Methods:
A two identical bio models for the upper airways were manufactured by (3DX Diagnostics, USA) to adapt the modified and the ordinary endotracheal tubes (ETT). The two techniques tested were using six hourly disinfection with CHX (group A) versus disinfection through the 24 hours infusion technique (Group B). Five microorganisms plus mixed bacteria were used and each was tested for five times. Normal saline was used constantly to irrigate the biomodels and Ten ml aliquot was collected by the procedure end. Culturing of the aliquots from decanted broth pre and post disinfection was performed. The time to apply CHX by practitioner was also compared.

Results:
There was a trend towards lower bacterial growth in group A in 5 experiments which reach statistical significance only with Pseudomonas aeruginosa (p=0.045). In one experiment the growth was lower in group B (figure1). Additionally there was time saving advantage in group B (15±3.3 versus 5±1.2 min, p=0.01).

Conclusion:
The novel technique got at least non inferior results, plus time saving advantage. These results may warrant future clinical trial.

References:

Image 1: