37 minute reduction in ED median length of stay

32% reduction in ED admission rates

30% higher discharge rates with Aerogen Ultra

75% reduction in total albuterol dose

Discover Better
aerogen.com
AEROSOL DOSE MATTERS IN THE EMERGENCY DEPARTMENT: A COMPARISON OF IMPACT OF BRONchodilATOR ADMINISTRATION WITH TWO NEBULIZER SYSTEMS

Dunne, R,1 Shortt SA,1 Dailey PA,2 (1. St. John Hospital and Medical Center, Detroit, MI, 2. Aerogen Ltd., Galway, Ireland)

1 Introduction
Clinical outcome studies comparing aerosol devices in patients in respiratory distress in the Emergency Department (ED) are limited. The vibrating mesh nebulizer (VMN) with adapter (Aerogen Ultra, Aerogen Ltd., Ireland) provides 4-fold drug delivery to lungs compared to jet nebulizer (JN). Aim of the study was to determine whether the improved lung delivery of bronchodilators would have an effect on admission rates, ED discharge rates and total albuterol dose in patients receiving aerosol treatments in the ED.

2 Methods
The Aerogen Ultra was implemented for 30 days during the evaluation period for all patients receiving bronchodilator therapy.

3 Results
Patient data was extracted from Sept (854 JN) and Oct (722 VMN). In Oct treated population experienced a reduction in admissions from the ED of 33%, associated with a 29% increase in discharges to home compared to Sept. Patients receiving bronchodilators with the VMN with adapter were 1.5 times more likely to be discharged than the JN group (OR=1.5, p < .001), respectively. The JN group was 1.7 times more likely to be admitted than the VMN group (OR=1.77, p < .001). The VMN group used less total drug (p < .05) with a 75% reduction of maximum albuterol dose administered (20 mg to 5 mg). The time period was prospectively identified. A report was built from available EMR data. All age groups were treated with bronchodilator therapy.

4 Conclusions
The VMN with adapter was associated with fewer admissions to the hospital from the ED with a substantial reduction in maximum albuterol dose required than the JN. The device type was a strong predictor of discharge disposition and total amount of drug, regardless of age or diagnosis. Randomized controlled studies are needed to corroborate these findings.

References

Disclosures: Ms. Dailey is a Medical Science Liaison for Aerogen Ltd. Aerogen Ltd provided the devices for the project.