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Is There a Place for Nasal High Flow in the Coronary Care Setting - A Controlled Study

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Abstract

SESSION TITLE: Novel Assessment and Treatments for Respiratory Failure

SESSION TYPE: Original Investigation Slide

PRESENTED ON: Tuesday, October 27, 2015 at 11:00 AM - 12:15 PM

PURPOSE: Efficacy of High Flow Nasal Cannula (HFNC) as a form of respiratory therapy is established in other high acuity areas such as Intensive Care. The therapy provides a level of dynamic positive airway pressure, washout of the anatomical dead space, and the ability to accurately titrate oxygen as required (21-100%). A wide range of gas flows may also be comfortably delivered to meet the patients' peak inspiratory demand (2- 60L/min). It was thought that with the introduction of HFNC, patient outcomes in the Coronary Care Unit (CCU) could also be improved. To date little evidence has been published with this focus.

METHODS: Observational historic controlled two-phase study involving (N=497) high acuity CCU patients. During retrospective phase I (N=249), the most common diagnostic categories and practice for O2 delivery were established as a target for recruitment in phase II During prospective phase II (N=248), conventional O2 delivery devices were replaced with HFNC (Optiflow™ using Airvo™ flow source Fisher and Paykel Healthcare Ltd). Recruitment matched retrospective phase numbers within the most common diagnostic categories as determined in phase I. For both phases 40 hours post admission data were extracted: level of respiratory support required, HFNC usage, length of stay, vital status and destination at discharge, and rate of therapy failure requiring escalation.

RESULTS: The benefit ratio between the phases was equivalent at baseline. The level of respiratory support required for CCU patients was significantly changed between two cohorts (Fisher's Exact Test, p-values <.0001). The requirement for NIV was reduced from 43 to 3 % without any complication. Therapy failure rates requiring support escalation were equivalent in the respective phases: 1.2 % versus 2.9% (p-value=0.22). Calculated means for HFNC therapy were: maximum duration 2 hours; $FiO_2$32% , flow L/min 31, SpO_2 96 %.

CONCLUSIONS: Significant differences seen in the level of support required for these CCU patients No difference seen in length of stay in hospital No difference seen for mortality For destination at discharge a significant difference was found between the two cohorts for patients at CCU (Chi-square test, p-value=0.035) Therapy failure rates in both phases were consistent and comparatively low

CLINICAL IMPLICATIONS: This therapy should be considered for routine use in this setting. Further randomized controlled studies are required.

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