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Use of High Flow Nasal Cannula Oxygen Therapy in Medical Wards

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Introduction

Heated, humidified and fixed fractionated oxygen delivered via high flow nasal cannula (HFNC) has been widely applied in intensive care units (ICU). It helps to improve respiratory distress of patient, and also facilitates in weaning of mechanical ventilation. Initial experience of HFNC in respiratory failure patients managed in general wards is reviewed.

Objectives

To evaluate the safety and outcomes of patients receiving HFNC in medical wards

Methodology

Medical records of all patients using HFNC outside ICU in North District Hospital from 1st January 2016 to 31st December 2016 were reviewed. Demographic data, primary diagnoses, co-morbidities and ventilatory modes before HFNC were reported. Safety and outcomes after HFNC were evaluated.

Result

Twenty-five patients received HFNC (Optiflow™, Fisher & Paykel Healthcare). Mean age was 76.6 years. Sixteen (64%) were male.

Primary diagnoses included pneumonia / pneumonitis (n= 18, 72%), pulmonary oedema (n=5, 20%) and lymphangitis carcinomatosa (n=2, 8%). Twenty-three patients (92%) had co-morbidities including chronic obstructive pulmonary disease (n=9), congestive heart failure (n=8), bronchiectasis or pulmonary fibrosis (n=5), chronic renal failure (n=4) and metastatic malignancy (n=3).

Twenty-one patients had type I respiratory failure (84%) while four had type II respiratory failure (16%). Immediately before HFNC use, 15 (60%) received non-invasive ventilation (NIV) and three (12%) received invasive mechanical ventilation (IMV). High flow oxygen therapy was applied successfully via tracheal mask in a patient with tracheostomy due to past laryngeal cancer.

None of the IMV patients required re-intubation. Immediate HFNC failure occurred in

two patients who developed desaturation requiring NIV support. One patient with influenzal pneumonitis required intubation after five days of HFNC. One patient with terminal lung cancer died after HFNC for 8 days. Average number of days on HFNC (defined as at least two hours per day used) was 5.6 (range 2-18).

Two patients complained that the HFNC was too hot when 37C was prescribed. No such complaint was received when temperature was reduced to 34C or 31C. No other significant adverse effect was reported.

Although 15 (60%) patients had Do-Not-Attempt-CPR (DNACPR) orders, 56% survived and discharged.

HFNC was successfully applied to respiratory failure patients managed in Medical wards. When prescribed at the temperature of 31C or 34C, it was well tolerated.