Chronic obstructive pulmonary disease (COPD) is defined as a common, preventable and treatable disease that is characterized by persistent respiratory symptoms and airflow limitation resulted from airway and/or alveolar abnormalities usually caused by significant exposure to noxious particles or gases and include chronic bronchitis, emphysema and chronic remodelling bronchial asthma [1].

Treatment of COPD include many pharmacological and non pharmacological interventions but still smoking cessation is the most important action. The main stay of pharmacological treatment is inhaled bronchodilators and inhaled steroids if FEV1 less than 50%. The non pharmacological interventions include quit smoking, pulmonary rehabilitation, Non invasive mechanical ventilation (NIMV) and surgical procedures (lung volume reduction surgery, bullectomy, lung transplantation) together with nutritional, social and psychiatric management [2,3].

NIMV is a mechanical respiratory support delivered via an interface (eg, nasal prongs or mask, face mask, or helmet) without the endotracheal intubation to give a continuous positive airway pressure (CPAP) or bilevel positive airway support (BiPAP) [4] resulted in many positive outcomes in management of COPD patients not only during exacerbation but also in stable state [5,6].

Hypercapnea in COPD is largely due to Respiratory muscle weakness resulted from diaphragmatic dysfunction (from hyperinflation), nutritional deficiencies and exhaustion from excessive work load [7].

By providing a rest for weakened respiratory muscles, the nocturnal NIMV can improve nocturnal and daytime respiratory function in advanced COPD with hypercapnic acidosis (PaCO2 >45 mmHg or pH <7.30) who do not need intubation and lack contraindications to NIV leading to decrease need for invasive mechanical ventilation with decrease morbidity and mortality[12,13,14]. For these patients frequent clinical monitoring is recommended every 15 minutes in the first hour; every 30 minutes in the next 3 hours then hourly for 8 hours [15]. Further continuation of NIMV as long as possible with Minimum 6 hours is advised for Patients who show initial improvements during the first few hours of treatment with suitable interruptions for oral intake, nebulisers etc[16].

Lastly a benefit from NIMV that is clearly observed in intubated patient for sever COPD exacerbation is the prevention of post-excitation respiratory failure and need for reintubation [17].

Conclusion

Although annoying for the patient and hardly to be explained by doctors, NIMV play an important role in patient with COPD not only during exacerbation but also in stable state with decrease in morbidity, hospital stay, intubation rate, frequency of exacerbations and mortality if the patients meet the its criteria with good compliance to it .

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