



A STUDY ON THE OUTCOME OF COVID-19 PATIENTS OF VARYING SEVERITY BASED ON VARIOUS MODALITIES OF OXYGEN SUPPLY

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ABSTRACT **Introduction:** The COVID 19 disease known to cause by severe acute respiratory syndrome corona virus 2(SARS-CoV2) causes various symptoms among infected individuals of varying severity. Patients can be categorised as having mild, moderate or severe disease based on their oxygen saturation at room air at the time of presentation. The outcome of the patients on various modalities was assessed. **Materials And Methods:** It is a retrospective observational study done in government general hospital, Vijayawada, in 100 patients between August 2020 to October 2020. **Results:** Out of 100 selected cases 63 patients were males and 37 were females. Mean age of patients 57.96 years. Out of 100 cases 80 cases were severe and 20 cases were moderately severe. All 20 patients who belong to moderate severity received O₂ via face mask and all were discharged successfully. Among 80 patients who were severely affected 51 patients received O₂ via face mask, 26 patients were on non invasive ventilation and three patients on mechanical ventilator. **Discussion:** The COVID-19 pandemic due to SARS-CoV-2 has led to substantial increase in hospitalisations for pneumonia with multi organ dysfunction. This infection is spread primarily via respiratory droplets. The most common symptoms are fever, dry cough and shortness of breath. Large number of infected patients were given oxygen supplementation by several means including oxygen via face mask, non invasive ventilation and mechanical ventilation. Along with oxygen support patients were also treated with antivirals, anticoagulants, steroids and other supportive treatment measures in various centers. **Conclusion:** Covid 19 is a pandemic spread by SARS CoV 2 which mainly infects respiratory system and hypoxia is one of the primary cause that leads to death and multiple organ dysfunction. According to this study patients with severe disease at the time of presentation has less favourable outcome than moderate cases.

KEYWORDS :

INTRODUCTION

The COVID 19 disease known to cause by severe acute respiratory syndrome corona virus 2(SARS-CoV2) causes various symptoms among infected individuals of varying severity. The disease mainly affects lungs because of receptor predominance but can affect other organs also causing multiorgan failure, sepsis and death. Patients can be categorised as having mild, moderate or severe disease based on their oxygen saturation at room air at the time of presentation. Those having mild disease have spo₂ of 94% and more, moderately ill patients have spo₂ of 90-93% at room air, severely ill patients have spo₂ less than 90%. The COVID 19 virus affects different organs with different pathophysiological mechanisms. Based on the severity of disease different modalities of therapy was given one such modality we used was oxygen therapy in addition to local standard of care and based on the modalities the outcome of the patients was assessed.

AIMS AND OBJECTIVES:

The study was carried out to evaluate the outcome of covid 19 patients of varying severity and different modalities of oxygen.

MATERIALS AND METHODS:

It is a retrospective observational study in 100 patients admitted in GGH Vijayawada who are either RTPCR positive or radiologically positive for covid 19 infection from 10-8-2020 to 10-10-2020.

Inclusion Criteria:

Patients who are above 18 years with rtPCR positivity or who have radiological features suggestive for covid 19 infection and those who gave consent are included in this study.

Exclusion Criteria:

Patients below 18 years, pregnant women and those who didn't give consent are excluded.

RESULTS:

Out of 100 selected cases 63 patients were males and 37 were females. Mean age of patients 57.96 years. Out of 100 cases 80 cases were severe and 20 cases were moderately severe. All 20 patients who belong to moderate severity received O₂ via face mask and all were discharged successfully. Among 80 patients who were severely affected 51 patients received O₂ via face mask, 26 patients were on non invasive

ventilation and three patients on mechanical ventilator. Among patients who were severely affected those who received O₂ via face mask were all discharged at the end of the study. Among 26 patients who received Continuous Positive Airway Pressure (CPAP) ventilation two succumbed to death. Mortality rate being 7.6%. Out of two patients who were kept on mechanical ventilator two succumbed to death. No deaths in patients who were moderately affected and 4 deaths in patients who were severely affected (5%) and 76 recovered (95%).

DISCUSSION

The COVID-19 pandemic due to SARS-CoV-2 has led to substantial increase in hospitalisations for pneumonia with multi organ dysfunction. This infection is spread primarily via respiratory droplets. The most common symptoms are fever, dry cough and shortness of breath. Large number of infected patients were given oxygen supplementation by several means including oxygen via face mask, non invasive ventilation and mechanical ventilation. Along with oxygen support patients were also treated with antivirals, anticoagulants, steroids and other supportive treatment measures in various centers. Studies show that among hospitalized patients 10-20% require intensive care unit admission 3-10% requires intubation and mechanical ventilation. Studies also show that patients who received oxygen via face mask had better outcomes than mechanically ventilated patients. Available reports suggest that High Flow Nasal Cannula (HFNC) is also a better method for patients who cannot reach sufficient amounts of oxygen via conventional devices.

HFNC provides higher concentration and flow of oxygen, resulting in decreased anatomical dead space by preventing rebreathing and ensure positive end expiratory pressure. A study done by Wenyan Pan et al. [Clinical outcome of standardised oxygen therapy nursing strategy in COVID19] revealed that standardised oxygen therapy improved the clinical outcome of covid 19 patients with a cure rate and discharge rate of 90%. Another study done by Bhakti.K Patel et al showed non invasive ventilation had a better outcome than invasive ventilation.

Another study done by Richard maellago Artigas et al. also showed HFNO patients were preferably benefited and had a better outcome than early invasive ventilation. This study also emphasises the observation that mechanical ventilated patients had a less favourable outcome.

CONCLUSION

Covid 19 is a pandemic spread by SARS CoV 2 which mainly infects respiratory system and hypoxia is one of the primary cause that leads to death and multiple organ dysfunction. According to this study patients with severe disease at the time of presentation has less favourable outcome than moderate cases. Patients who received O2 via face mask had good outcomes and all were successfully discharged Where as patients who were on mechanical ventilation has 66.6% mortality rate and among those on non invasive ventilation 7.6% was the mortalityrate. Infection was more common in males than females. Mean age of patients is 57.96.

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