Implementing Prone Position and Nursing Consideration in Non Intubated Covid-19 Patients: A Case Report

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ABSTRACT
The need for mechanical ventilation increased rapidly, in line with the surge in COVID-19 cases. Giving the prone position is one form of Evidence-Based Nursing practice and has proven beneficial for patients with respiratory distress due to COVID-19 infection. This study aims to present that pronation is an effort to prevent COVID-19 patients with mild to moderate symptoms from falling into severe conditions. We report two cases of COVID-19 patients with moderate symptoms who are not intubated. Pronation is carried out in 9 to 15 days, either using Non-Invasive Ventilation or High Flow Nasal Cannula. By implementing the pronation, the need for oxygen fraction can be weaned, and hemodynamic parameters stabilize. The provision of pronation in COVID-19 cases is considered to reduce the high number of needs for mechanical ventilation in the COVID-19 pandemic.

Keywords: COVID-19; Evidence-Based Nursing; pronation

INTRODUCTION
Many studies recommend pronation positioning to increase oxygenation requirements in patients with acute respiratory distress syndrome (ARDS). In a meta-analysis publication and clinical trial of Prone Position in Severe ARDS (PRO – SEVA), positioning has been recognized as having significant benefits on patient life expectancy (1). Besides benefiting patients with acute symptoms intubated, physically offering the prone posture is also suitable for ARDS patients who are conscious but not using mechanical ventilation. Before the pandemic Corona Virus Disease 2019 (COVID-19) broke out, the literature regarding the pronation position in patients who were not intubated was still very minimal (2).

The health care system is overwhelmed by the increasing number of patients requiring mechanical ventilation and the lack of health workers in the field. In addition, the prognosis of patients with intubated COVID-19 infection is highly variable and unpredictable (3). There is, therefore, an increasing focus on strategies to prevent worsening of the patient’s condition and the high rate of mechanical ventilation with pronation attempts. This case report discusses the successful implementation of nursing in the pronation position in patients with confirmed severe COVID-19 in terms of its application in patients.

MATERIALS AND METHODS
This is a case report of 2 patients with ARDS undergoing High Flow Nasal Cannula (HFNC) and Non-Invasive Ventilation (NIV) in the Intensive Care Unit (ICU). The data collection techniques included interviews, observations, physical examinations, and medical records. The data were analyzed to determine nursing problems and to review the effectiveness of the interventions that have been applied to resolve patient’s nursing problems. Ethical approval was obtained from the ethics committees of the Universitas Indonesia Hospital (Reference No. 0049/SKPE/KKO/2021/00).

CASE REPORT
Case 1 Overview
On October 19, 2020, a 50-year-old male was admitted to our hospital with fever, increased work of breathing, dry cough, nausea, myalgia, diarrhea, and dyspnea. His medical story was non-contributory, and he had no history of systemic illness. On October 22, 2020, the...
On October 24, 2020, NIV was started. The patient remained on NIV for 24 hours, and remained in the prone position for 2 hours four times a day. After two days of pronation, the patient made minimal improvements in oxygenation. Pronation was continued every 2 hours 4 times a day. On October 23, 2020, the FiO2 was weaned to 60%. From October 26, 2020, to October 27, 2020, the pronation position was temporarily postponed due to the unstable hemodynamic.

On 29 – 31 October 2020, the patient was started in the pronation position again for 2 hours 4 times a day. On November 1, 2020, the patient was used HFNC. On November 3, 2020, the patient was tried to be weaned using a Non-Rebreathing Mask 10 L/min. The pronation position continued with the same cycle until November 7, 2020, the patient started using the nasal cannula, and was transferred to the High Care Unit (Fig. 1).
On August 31, 2020, the patient developed worsening tachypnea and desaturation. The mask was then replaced with HFNC. Her hypoxemia continued to worsen over the next 2 days. Prone position was suggested due to severe hypoxemia. Alprazolam was started with a positive response, and the next day, the patient was better able to tolerate the prone position. Within few hours of doing prone position, her SpO$_2$ values improved, and FiO$_2$ was titrated down. Patient continued to do prone position and was able to wean down to 6 L/min masks by day tenth of prone position (Fig. 2).

The problems that often arise with pronation in intubated patients can be minimized in patients who are not intubated. Other nursing problems that may be faced include how to reduce patient anxiety during pronation. Thus, this is where the nurse’s role as an educator is to convince the patient cognitively, affectively, and psychometrically that giving pronation is one of the efforts in preventing the deterioration of the patient’s condition.

CONCLUSION

Based on available evidence, pronation of not intubated patients has been recommended to prevent worsening of the patient’s condition requiring intubation. Thus, the healthcare team, especially nursing, must understand that the management of pronation in not intubated patients to provide comprehensive nursing care. Pronation of a not intubated patient can be used in a variety of situations.

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REFERENCES