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**Perbedaan Parameter Respiratorik Sebelum dan Sesudah Tindakan *Suction*
Pada Pasien Yang Terpasang Ventilator di ICU**

ABSTRAK

Latar Belakang: Ventilator mekanik di ICU membantu pasien kritis tetapi meningkatkan risiko cedera saluran napas dan *ventilator-associated pneumonia (VAP)*. *Suction* diperlukan untuk membersihkan sekret, namun dapat memengaruhi parameter respiratorik seperti *Respiratory Rate (RR)*, Volume Tidal (VT), *Minute Ventilation (MV)*, *Peak Inspiratory Pressure (PIP)*, *Positive End-Expiratory Pressure (PEEP)*, Saturasi Oksigen (SpO₂), dan *end-tidal CO₂ (EtCO₂)*. Penelitian ini mengevaluasi perubahan parameter respiratorik sebelum dan sesudah *suction* pada pasien ventilator di ICU RSUD Merah Putih.

Metode: Penelitian ini menggunakan desain *pra-eksperimental* dengan pendekatan *time series*. Subjek dipilih dengan teknik *purposive sampling*, terdiri dari 15 responden. Tindakan *suction* dilakukan sesuai Standar Prosedur Operasional. Data dikumpulkan dan didokumentasikan pada lembar monitoring.

Hasil: Analisis menunjukkan ada peningkatan signifikan dalam *Respiratory Rate (RR)* sebesar 0,400 napas/menit dan *end-tidal CO₂ (EtCO₂)* sebesar 3,800 mmHg, serta penurunan signifikan dalam Volume Tidal (VT) sebesar 70,333 mL, *Minute Ventilation (MV)* sebesar 1,46133 L/menit, *Peak Inspiratory Pressure (PIP)* sebesar 5,067 cmH₂O, dan SpO₂ sebesar 0,667% setelah *suction*. *Expiratory Pressure (PEEP)* juga meningkat signifikan sebesar 0,1733 cmH₂O Dimana P-Value masing-masing variable ($p < 0,05$). Disarankan agar rumah sakit menerapkan protokol monitoring ketat pasca-*suction* untuk meminimalkan dampak negatif terhadap pasien ventilasi mekanis.

Simpulan: *Suction* pada pasien ventilator meningkatkan RR, EtCO₂, dan PEEP secara signifikan, sementara VT, MV, PIP, dan SpO₂ menurun signifikan. Temuan ini menekankan pentingnya pemantauan menyeluruh terhadap efek *suction* untuk mengoptimalkan manajemen ventilasi dan stabilitas parameter respiratorik pada pasien ICU.

Kata Kunci: *Suction*, Ventilator, Parameter Respiratorik.

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**Differences in Respiratory Parameters Before and After Suctioning
Procedures in Ventilator-Dependent ICU Patients**

ABSTRACT

Background: Mechanical ventilation in the ICU assists critically ill patients but increases the risk of airway injury and VAP. Suctioning is necessary to clear secretions, but it can impact respiratory parameters such as Respiratory Rate (RR), Tidal Volume, Minute Ventilation, Peak Inspiratory Pressure (PIP), Positive End-Expiratory Pressure (PEEP), Oxygen Saturation (SpO₂), and end-tidal CO₂ (EtCO₂). This study evaluates the changes in respiratory parameters before and after suctioning in ventilated patients in the ICU of RSUD Merah Putih.

Methods: This study uses a pre-experimental design with a time series approach. Subjects were selected through purposive sampling, consisting of 15 respondents. Suctioning was performed according to Standard Operating Procedures. Data were collected and documented on monitoring sheets.

Results: The analysis results showed a significant increase in Respiratory Rate (RR) by 0.400 breaths/minute and end-tidal CO₂ (EtCO₂) by 3.800 mmHg, along with a significant decrease in Tidal Volume (VT) by 70.333 mL, Minute Ventilation (MV) by 1.46133 L/minute, Peak Inspiratory Pressure (PIP) by 5.067 cmH₂O, and SpO₂ by 0.667% after suction. Positive End-Expiratory Pressure (PEEP) also significantly increased by 0.1733 cmH₂O. The p-values for each variable ($p < 0.05$) indicate that suction in ventilated patients significantly increases Respiratory Rate (RR), end-tidal CO₂ (EtCO₂), and Positive End-Expiratory Pressure (PEEP), while Tidal Volume (VT), Minute Ventilation (MV), Peak Inspiratory Pressure (PIP), and Oxygen Saturation (SpO₂) significantly decrease. It is recommended that hospitals implement strict post-suction monitoring protocols to minimize the negative impact on mechanically ventilated patients.

Conclusion: Suctioning in ventilated patients significantly increased RR, EtCO₂, and PEEP, while VT, MV, PIP, and SpO₂ significantly decreased. These findings emphasize the importance of comprehensive monitoring of suctioning effects to optimize ventilation management and the stability of respiratory parameters in ICU patients.

Keywords: Suction, Ventilator, Respiratory Parameters.