Keefektifan dan Keamanan Heparin Inhalasi pada pasien ICU COVID-19 dengan dosis total harian berbeda: Kajian pada Alveolar-Arterial Oxygen Difference, Activated Partial Tromboplastin Time dan d-Dimer = Effectivity and Safety Inhaled Heparin for COVID-19 ICU Patients with variety of daily total dose based on Alveolar-Arterial Oxygen Difference, Activated Partial Thromboplastin Time and d-Dimer

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Abstrak

Latar Belakang: Penggunaan heparin inhalasi pada beberapa penelitian COVID-19 memberikan hasil dalam perbaikan klinis pasien, baik dalam menurunkan lama rawat, perbaikan oksigenasi paru, dan mortalitas. Dosis harian total heparin inhalasi yang bervariasi terutama bila diberikan bersamaan dengan antikoagulan sistemik, memiliki resiko komplikasi perdarahan yang memerlukan kajian terhadap keefektifan dan keamanannya.
Tujuan: Meneliti keefektifan dan keamanan inhalasi heparin dosis 150,000 IU/hari dengan dosis 100.000 IU/hari dinilai dari AaDO2, aPTT dan d-Dimer dalam 7 hari pengamatan pada pasien ICU COVID-19.
Metode: Penelitian ini merupakan penelitian observasional dengan studi kohort retrospektif menggunakan data sekunder rekam medis pasien ICU COVID-19 bulan September 2020 – September 2021. Terdapat 300 sampel menggunakan consecutive sampling. Pasien dikelompokkan menjadi kelompok heparin dosis 150.000 IU/hari dan 100.000 IU/hari. Pencatatan dilakukan dalam 7 hari pengamatan. Uji Statistik menggunakan uji Mann Whitney untuk menilai tingkat keparahan, Uji Wilcoxon rank test untuk melihat perbedaan variabel dependen hari pertama dengan hari ketujuh pada masing-masing dosis.
Hasil: Heparin inhalasi baik dosis 150.000 IU/hari dan 100.000 IU /hari bermakna menurunkan AaDO2 pada 7 hari pengamatan (p 0.001). Nilai aPTT tidak memanjang pada kedua kelompok, dan kedua dosis heparin sama- sama menurunkan nilai d-Dimer pada 7 hari pengamatan (p 0.001).
Simpulan: Heparin Inhalasi dosis 150.000 IU/hari sama efektif dinilai dari AaDO2, dan sama amannya terhadap aPTT dan d-Dimer dibandingkan heparin inhalasi dosis 100.000 IU/hari.
.....Rationale: The use of inhaled heparin in several COVID-19 studies has resulted in clinical improvements in patients, both in reducing length of treatment, improving pulmonary oxygenation, and reducing mortality. The varying total daily dose of inhaled heparin, especially when given together with systemic anticoagulants, poses a risk of bleeding complications that require review of its effectiveness and safety.
Objective: To analyze effectiveness and safety of heparin inhalation dosage 150,000 IU/day compare to 100,000 IU/day assessed from AaDO2, aPTT and d-Dimer from 7

days observation in ICU COVID-19 patients with invasive and non-invasive ventilator patterns.
Methods: An observational cohort retrospective study used secondary data from medical records ICU COVID-19 patients with invasive and noninvasive ventilator patterns from September 2020 – September 2021. There were 300 samples using consecutive sampling. Patients divided into 2 groups, one received dosage 150,000 IU / day heparin inhalation, the other received heparin inhalation dosage 100,000 IU / day. Recording of the research from medical records is carried out at 7 days of ICU treatment. Statistical tests were carried out using Mann Whitney to assess severity, Wilcoxon rank test to see the difference in dependent variables day 1 and day 7 to dose.
Measurements and Main Results: Heparin inhalation at dose of 150,000 IU/day and 100,000 IU/day both significantly decreased AaDO2 at 7 days of observation (p 0.001). The aPTT on both groups at 7 days of observation are within normal limits. Both doses of heparin inhalation decreased d-dimer at 7 days of observation (p 0.001).
Conclusion: Inhaled heparin doses of 150,000 IU/day as effective and as safe as inhaled heparin doses of 100,000 IU/day.