

## ABSTRAK

**Latar Belakang:** Laringoskopi dan intubasi endotrakhea merupakan tindakan yang rutin dilakukan pada pasien-pasien yang menjalani operasi dengan anestesi umum. Tujuannya untuk menjaga patensi jalan nafas, oksigenasi, dan untuk fasilitasi ventilasi ke paru-paru. Tindakan ini mempunyai efek takikardia dan peningkatan tekanan darah. Pemberian obat-obatan dipilih untuk mengontrol respon hemodinamik terhadap laringoskopi dan intubasi, diantaranya fentanil dan klonidin.

**Tujuan:** Menilai perbedaan efek pemberian fentanil 1 µg/kg ditambah klonidin 1,5 µg/kg dibandingkan dengan fentanil 2 µg/kg untuk mencegah respon hemodinamik akibat tindakan laringoskopi dan intubasi endotrakhea.

**Metode:** Penelitian acak buta ganda (*randomized double blind controlled trial/RCT*) dilakukan pada pasien yang menjalani bedah elektif dengan teknik anestesi umum intubasi oral di RSUP Dr. Sadjito Yogyakarta, Desember 2017–Maret 2018. Didapatkan 54 subjek yang masuk kriteria inklusi, setuju mengikuti penelitian dengan menandatangani formulir persetujuan, dan bersedia untuk dilakukan prosedur pemasangan *monitor invasif arterial line*. Subjek terbagi dalam 2 kelompok yang mendapat kombinasi fentanil-klonidin (Kelompok C) dan fentanil (Kelompok F). Pengukuran respon hemodinamik dilakukan sebelum induksi anestesi, setelah induksi anestesi, menit 0,1,2,3,4 dan menit ke-5 setelah laringoskopi dan intubasi endotrakhea. Sebanyak 2 subjek *drop out* karena intubasi dilakukan lebih dari sekali.

**Hasil dan Pembahasan:** Setelah tindakan laringoskopi dan intubasi endotrakhea, subjek pada kelompok C memiliki laju jantung yang lebih rendah mulai dari post-induksi hingga menit ke-5 ( $p<0,05$ ), tekanan darah sistolik lebih rendah pada menit ke-1, 2, 3, 4 ( $p<0,05$ ), tekanan darah diastolik lebih rendah pada menit ke-1, 2, 3 ( $p<0,05$ ), tekanan arteri rata-rata lebih rendah pada menit ke-1, 2, 3, 4 ( $p<0,05$ ) dibandingkan kelompok F. Efek samping yang timbul yaitu hipertensi, takiaritmia, hipotensi, dan bradikardia. Kombinasi fentanil dan klonidin mengontrol respon hemodinamik lebih baik dibandingkan fentanil.

**Kesimpulan:** Terdapat perbedaan secara statistik pemberian fentanil 1µg/kg ditambah klonidin 1,5 µg/kg dibandingkan fentanil 2 µg/kg untuk mencegah peningkatan respon hemodinamik akibat tindakan laringoskopi dan intubasi endotrakhea.

**Kata kunci:** laringoskopi, intubasi, fentanil, klonidin, hemodinamik.

## ABSTRACT

**Background :** Laryngoscopy and tracheal intubation are routine procedures for patient who underwent surgery with general anaesthesia. The aim of the procedure is to protect airway patency, oxygenation, and to facilitate ventilation of the lung. Laryngoscopy and tracheal intubation have side effect tachycardia and an increase in the blood pressure. Different drugs have been used to control this hemodynamic responses, such as fentanyl and clonidine.

**Aim:** Purpose of this study was to assess the effects of combination intravenous fentanyl 1 µg/kg-clonidine 1,5 µg/kg and intravenous fentanyl 2 µg/kg to control haemodynamic response during laryngoscopy and tracheal intubation.

**Methods:** We designed a randomize, double-blind controlled trial (RCT) study on patients who underwent elective surgical procedures under general anaesthesia with tracheal intubation, in RSUP Dr. Sardjito from December 2017 to March 2018. There were 54 patients who met all the inclusion criteria, signed the informed consent form and agreed to have invasive monitoring using an arterial line placement. All patients were divided into two groups, fentanyl-clonidine group C and fentanyl group F. Hemodynamic parameters were recorded before giving induction agents (pre-induction), after giving induction agents (post-induction), and at 0, 1, 2, 3, 4, and 5 minutes after laryngoscopy and endotracheal intubation. There were 2 drop out due to more than one attempt of intubation.

**Results and interpretation:** After the laryngoscopy and tracheal intubation procedure, the heart rate was significantly lower in C group at post induction, 0, 1, 2, 3, 4, and 5 minutes ( $p<0.05$ ), the systolic blood pressure is significantly lower at 1, 2, 3, and 4 minutes ( $p<0.05$ ), the diastolic blood pressure is significantly lower at 1, 2, and 3 minutes ( $p<0.05$ ), the mean arterial pressure is significantly lower at 1, 2, 3, and 4 minutes ( $p<0.05$ ) compared to F group. In our study some patients developed adverse events hypertension, tachyarrhythmia, hypotension, and bradyarrhythmia. Combination of fentanyl-clonidine control haemodynamic response to laryngoscopy and intubation better than fentanyl.

**Conclusion:** There were different statistically of intravenous fentanyl 1 µg/kg clonidine 1,5 µg/kg and intravenous fentanyl 2 µg/kg in control haemodynamic response to laryngoscopy and intubation.

**Keywords:** laryngoscopy, intubation, fentanyl, clonidine, hemodynamic.