

Efek inhalasi lidokain terhadap perubahan laju nadi dan tekanan darah pada tindakan laringoskopi dan intubasi dibandingkan dengan inhalasi NaCl 0,9% = Effect of lidocaine inhalation toward heart rate and blood pressure changes on laryngoscopy and intubation in comparison to NaCl 0,9% inhalation

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Abstrak

Latar belakang: Prosedur laringoskopi dan intubasi merupakan prosedur di bidang anestesi yang sering dilakukan namun merupakan prosedur yang mencetuskan rangsang nyeri yang hebat. Tekanan darah dan laju nadi dapat meningkat karena rangsang simpatis. Respon kardiovaskular tersebut dapat berbahaya pada pasien yang rentan, terutama yang memiliki masalah gangguan jantung ataupun serebrovaskular. Salah satu metode untuk mengurangi hal tersebut adalah penggunaan anestesi, termasuk dengan lidokain. Peningkatan kadar plasma lidokain yang diberikan dengan intravena dapat menimbulkan berbagai efek samping. Penelitian ini bertujuan untuk menilai efek lidokain yang diberikan secara inhalasi.

Metode. Penelitian ini merupakan uji klinis acak tersamar ganda terhadap pasien di Instalasi Bedah Pusat RSUPN Cipto Mangunkusumo Jakarta. Sebanyak 24 pasien diberikan inhalasi lidokain 1,5 mg/kgbb dan 25 subjek diberikan inhalasi NaCl 0.9% sebelum tindakan laringoskopi dan intubasi. Paramater kardiovaskular yang diteliti yakni perubahan tekanan darah sistolik, diastolik, mean arterial pressure (MAP) dan laju nadi yang dinilai secara serial.

Hasil. Pada menit pertama pasca intubasi, MAP dan laju nadi pada kelompok NaCl lebih tinggi, dengan perbedaan MAP sebesar 15,5 mmHg(9,2-21,7 95%IK; $p<0,001$) dan laju nadi sebesar 9,5 denyut/menit (4,8-14,2 95% IK; $p<0,001$). Pada menit ke-3 pasca intubasi, perbedaan MAP dan laju nadi kedua kelompok yakni 16,6 mmHg (9,6-23,6 95%IK; $p<0,001$) dan 11,2 denyut/menit (5,2-17,2 95%IK ; $p<0,001$). Pada menit ke-5 pasca intubasi, tetap terdapat perbedaan bermakna variabel MAP dan laju nadi kedua kelompok, yakni 16,7 mmHg (11,3-22,2 95%IK; $p<0,001$) dan 10,0 denyut/menit (3,5-16,5 95%IK; $p=0,03$).

Simpulan. Inhalasi lidokain mampu menekan respon peningkatan tekanan darah dan laju nadi akibat rangsang nyeri dan stimulasi simpatis akibat tindakan laringoskopi dan intubasi.

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Background. Laryngoscopy and intubation are routine anaesthesiological procedures which stimulate great amount of pain. Blood pressure and heart rate can be increased by symphatetic stimulation. Laryngoscopy and intubation procedure is a procedure in the field of anesthesia is often done however is a procedure which sparked great pain stimuli. Blood pressure and pulse rate can be increased by stimulation of the sympathetic. The cardiovascular response can be harmful in patients who are vulnerable, especially those who have cardiac or cerebrovascular problems. One method to reduce these was the use of anesthetics, including lidocaine. Increased plasma levels of lidocaine given intravenously can cause various side effects. This study aimed to assess the effects of lidocain inhalation.

Methods. Method. This study was a randomized, double-blind clinical trial on patients at the Surgical Center Installation Cipto Mangunkusumo. A total of 24 patients were given inhaled lidocaine 1.5 mg / kg and 25 subjects were given inhaled NaCl 0.9% before laryngoscopy and intubation. Cardiovascular parameters being investigated were changes in systolic and diastolic blood pressure, mean arterial pressure (MAP) and heart rate in a serial manner.

Results. In the first minute after intubation, MAP and heart rate were higher in NaCl group. The difference in MAP was 15.5 mmHg (95% CI 9.2 - 21.7; $p < 0.001$) while heart rate was 9.5 beats / min (95% CI 4.8 - 14.2; $p < 0.001$). In the 3rd minute after intubation, MAP and heart rate kept different in both groups: 16.6 mmHg (95% CI 9.6 - 23.6; $p < 0.001$) and 11.2 beats / minute (5.2 - 17, 2, 95% CI; $p < 0.001$), respectively. In the 5th minute after intubation, MAP and heart rate remained different between two groups: 16.7 mmHg (95% CI 11.3 - 22.2; $p < 0.001$) and 10.0 beats / min (3.5 - 16.5, 95% CI; $p = 0.03$), respectively.

Conclusions. Lidocain inhalation was able to suppress the increased of blood pressure and heart rate due to pain stimuli and sympathetic stimulation after laryngoscopy and intubation.