

## ABSTRAK

### PERBANDINGAN EFEK PENGGUNAAN KOMBINASI KETAMIN-SILAZIN DAN KETAMIN-MEDETOMIDIN TERHADAP ONSET DAN DURASI ANESTESIA PADA TIKUS *Sprague Dawley*

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Anestesia merupakan prosedur penting dalam tindakan operatif veteriner untuk memberikan imobilisasi, sedasi, dan analgesia. Ketamin sebagai agen disosiatif sering dikombinasikan dengan agonis  $\alpha_2$  adrenergik seperti silazin dan medetomidin untuk meningkatkan efektivitas anestetika. Penelitian ini bertujuan untuk membandingkan efek anestesia antara kombinasi ketamin-silazin dan ketamin-medetomidin berdasarkan parameter onset dan durasi anestesia pada tikus sprague-dawley. Sebanyak 18 tikus dibagi secara acak ke dalam tiga kelompok. Kelompok KT diinjeksikan ketamin tunggal dengan dosis 90 mg/kg BB. Kelompok KS diinjeksikan kombinasi ketamin-silazin dengan dosis 87 mg/kg ketamin dan 13 mg/kg BB silazin. Kelompok KM diinjeksikan kombinasi ketamin-medetomidin dengan dosis 75 mg/kg ketamin dan 0,05 mg/kg medetomidin. Injeksi anestetika dilakukan secara intramuskular. Onset anestesia diukur dari waktu injeksi hingga hilangnya kesadaran, sedangkan durasi anestesia diukur dari hilangnya kesadaran hingga kembalinya kesadaran. Data hasil penelitian diolah menggunakan SPSS, melalui uji normalitas data *shapiro-wilk*, uji perbedaan rata-rata *one-way ANOVA*, dan uji *post hoc tukey*.

Hasil penelitian menunjukkan rata-rata onset kelompok KT adalah  $7,01 \pm 1,20$  menit; rata-rata onset anestesia pada kelompok KS yaitu  $3,26 \pm 0,51$  menit; dan rata-rata onset anestesia pada kelompok KM adalah  $1,97 \pm 0,97$  menit. Hasil penelitian juga menunjukkan rata-rata durasi anestesia dari kelompok KT adalah  $44,28 \pm 8,27$  menit; durasi anestesia pada kelompok KS yaitu  $103,67 \pm 31,27$  menit; dan durasi anestesia pada kelompok KM yaitu  $209,33 \pm 21,54$  menit. Hasil pengolahan data menunjukkan terdapat perbedaan yang signifikan antara onset anestesia ketamin tunggal dengan onset ketamin-silazin dan onset ketamin-medetomidin. Tidak ada perbedaan yang signifikan antara onset ketamin-silazin dengan onset ketamin-medetomidin. Pengolahan data juga menunjukkan perbedaan yang signifikan antara durasi anestesia ketamin tunggal, ketamin-silazin, dan ketamin-medetomidin.

Kata kunci: Durasi anestesia, ketamin, medetomidin, onset anestesia, silazin.

## ABSTRACT

### COMPARISON OF THE EFFECTS OF KETAMINE-XYLAZINE AND KETAMINE-MEDETOMIDINE COMBINATIONS ON ONSET AND DURATION OF ANESTHESIA IN *Sprague Dawley* RATS

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Anesthesia is an important procedure in veterinary surgery to provide immobilization, sedation, and analgesia. Ketamine, a dissociative agent, is often combined with  $\alpha_2$  adrenergic agonists such as silazine and medetomidine to increase the effectiveness of anesthesia. This study aims to compare the anesthetic effect between ketamine-silazine and ketamine-medetomidine combinations based on the parameters of onset and duration of anesthesia in sprague-dawley rats. A total of 18 rats were randomly divided into three groups. The KT group was injected with a single ketamine at a dose of 90 mg/kg BW. The KS group was injected with a ketamine-xylazine combination at a dose of 87 mg/kg ketamine and 13 mg/kg BW xylazine. The KM group was injected with a combination of ketamine-medetomidine at a dose of 75 mg/kg ketamine and 0.05 mg/kg medetomidine. The injection of anesthetics was done intramuscularly. The onset of anesthesia was measured from the time of injection to the loss of consciousness, while the duration of anesthesia was measured from the loss of consciousness to the return of consciousness. The data is processed using SPSS, through the Shapiro-Wilk data normality test, one-way ANOVA mean difference test, and Tukey post hoc test.

The results showed that the average onset of the KT group was  $7.01 \pm 1.20$  minutes; anesthesia onset in the KS group was  $3.26 \pm 0.51$  minutes; and anesthesia onset in the KM group was  $1.97 \pm 0.97$  minutes. The results also showed that the average duration of anesthesia of the KT group was  $44.28 \pm 8.27$  minutes; the average duration of anesthesia in the KS group was  $103.67 \pm 31.27$  minutes; and the average duration of anesthesia in the KM group was  $209.33 \pm 21.54$  minutes. The results of data showed that there was a significant difference between the onset of ketamine alone anesthesia with ketamine-xylazine onset and ketamine-medetomidine onset. There was no significant difference between the onset of ketamine-xylazine and the onset of ketamine-medetomidine. Data processing also showed significant differences between the duration of anesthesia of single ketamine, ketamine-xylazine, and ketamine-medetomidine.

Keywords: Duration of anesthesia, ketamine, medetomidine, onset of anesthesia, xylazine.