

## ABSTRACT

**Background:** Thrombin time (TT) is one of the parameters for hemostasis examination. This examination is used to test the third stage of the coagulation process, namely the conversion of fibrinogen to fibrin. The results of laboratory tests must be of good quality. The quality of the results of the TT examination is influenced by pre-analytic factors, one of which is the sample collection process such as the order of filling the sodium citrate tube in the vacutainer system blood collection.

**Objective:** To determine whether there is a difference in the Thrombin Time (TT) value obtained from the first, second and third filling sequence of sodium citrate tubes in the vacutainer system blood collection.

**Methods:** The type of this research is pre experimental design with the research design used is Static Group Comparison. This study used sample normal citrate plasma with total sample size of 17 samples, each of which was accommodated in the first, second and third filling sequence of the sodium citrate tube in the vacutainer system blood collection, so that 51 data were obtained from the Thrombin Time (TT) examination. The data that has been obtained were analyzed descriptively and statistically using the Repeated Measures ANOVA test.

**Results:** The percentage difference between the results of the TT examination on the first and second order of filling Sodium citrate tubes, the first with the third and the second with the third, respectively, were 4.2%, 4.5% and 1.2%. The results of the Repeated Measures ANOVA test were obtained  $p > \alpha 0.05$  and the Pairwise Comparisons post-hoc test showed no significant difference in the results of the TT examination obtained from the sodium citrate tube in the first, second and third filling sequences of the vacutainer system blood collection. .

**Conclusion:** There is no difference in the value of Thrombin Time (TT) in the first, second and third filling sequence sodium citrate tubes in the vacutainer system blood collection.

**Keywords:** Tube Filling Order, Sodium Citrate, Blood Collection, Vacutainer System, Thrombin Time

## ABSTRAK

**Latar Belakang :** Pemeriksaan *Thrombin Time* (TT) termasuk salah satu parameter pemeriksaan hemostasis. Pemeriksaan ini digunakan untuk menguji tahap tiga proses koagulasi yaitu perubahan fibrinogen menjadi fibrin. Hasil pemeriksaan laboratorium harus bermutu. Mutu hasil pemeriksaan TT dipengaruhi oleh faktor praanalitik salah satunya yaitu proses pengumpulan sampel seperti urutan pengisian tabung Natrium sitrat pada pengambilan darah sistem *vacutainer*.

**Tujuan :** Untuk mengetahui apakah terdapat perbedaan nilai *Thrombin Time* (TT) yang diperoleh dari tabung Natrium sitrat urutan pengisian pertama, kedua dan ketiga pada pengambilan darah sistem *vacutainer*.

**Metode:** Jenis penelitian ini adalah *pre experimental design* dengan desain penelitian yang digunakan adalah *Static Group Comparison*. Penelitian ini menggunakan sampel berupa plasma sitrat normal dengan jumlah sampel sebanyak 17 sampel, masing – masing ditampung pada tabung Natrium sitrat urutan pengisian pertama, kedua dan ketiga pada pengambilan darah sistem *vacutainer*, sehingga diperoleh data sebanyak 51 data hasil pemeriksaan *Thrombin Time* (TT). Data yang telah diperoleh selanjutnya dianalisis secara deskriptif dan statistik menggunakan uji *Repeated Measures ANOVA*.

**Hasil Penelitian :** Persentase selisih hasil pemeriksaan TT pada tabung Natrium sitrat urutan pengisian pertama dengan kedua, pertama dengan ketiga dan kedua dengan ketiga berturut-turut yaitu 4,2%, 4,5% dan 1,2% . Hasil uji *Repeated Measures ANOVA* didapatkan  $p > \alpha$  0,05 dan uji lanjut (*post hoc*) *Pairwise Comparisons* menunjukkan tidak ada perbedaan yang signifikan pada hasil pemeriksaan TT yang diperoleh dari tabung Natrium sitrat urutan pengisian pertama, kedua dan ketiga pada pengambilan darah sistem *vacutainer*.

**Kesimpulan:** Tidak ada perbedaan nilai *Thrombin Time* (TT) pada tabung Natrium sitrat urutan pengisian pertama , kedua dan ketiga pada pengambilan darah sistem *vacutainer*.

**Kata Kunci :** Urutan Pengisian Tabung, Natrium Sitrat, Pengambilan Darah, Sistem *Vacutainer*, *Thrombin Time*