ABSTRACT

Background: The lipemic serum interferes with the spectrophotometer examination because it causes interference with the wavelength by the presence of lipid particles. High Speed Centrifugation is the gold standard in handling lipemic serum, however, this method is quite expensive so another alternative is needed to handle lipemic serum which is easily applied in all laboratories, one of them is using Alpha Cyclodextrin.

Objective: To determine the difference, mean difference and mean difference in lipemic serum triglyceride levels treated with alpha cyclodextrin and High Speed Centrifugation

Research Methods: This type of research is a pure experiment with pretest-posttest pretest control group design research design. This research was conducted at the Clinical Chemistry Laboratory of the Department of Health Polytechnic of the Ministry of Health of Yogyakarta in April 2019. The lipemic serum used amounted to 30 with triglyceride levels above 300 mg / dL, then in statistical analysis with Paired Sample T-Test and Independent T-Test Samples.

Results: The average difference in triglyceride levels treated with the addition of alpha cyclodextrin was 273 mg / dL and treated with High Speed Centrifugation of 77 mg / dL. The analysis results of Paired Sample T-Test obtained a significance of 0,000 ($p < 0.05$) which means that there were significant differences in the levels of lipemic serum triglycerides before and after handling High Speed Centrifugation. Whereas Independent T-Test Samples were obtained 0,000 ($p < 0,05$) which means that there were differences in triglyceride levels in lipemic serum treated with Alpha Cyclodextrin and High Speed Centrifugation. Then direct results and Alfa Cyclodextrin were converted to High Speed Centrifugation by adding 17% and 59%.

Conclusions: There were differences in lipemic serum triglyceride levels treated with alpha cyclodextrin and high speed centrifugation, the average difference in triglyceride levels treated with addition of alpha cyclodextrin was 273 mg / dL and treated with High Speed Centrifugation at 77 mg / dL, and mean serum difference lipemic treated with Alpha Cyclodextrin and High Speed Centrifugation of 273 mg/dL.

Keywords: Alpha cyclodextrin, high speed centrifugation, triglycerides.

ABSTRAK

Latar Belakang : Serum lipemik mengganggu pemeriksaan spektrofotometer karena menyebabkan gangguan pada panjang gelombang oleh adanya partikel lipid. *High Speed* Sentrifugasi adalah gold standar dalam penanganan serum lipemik, namun, metode ini cukup mahal sehingga dibutuhkan alternatif lain untuk menangani serum lipemik yang mudah diaplikasikan di semua laboratorium salah satunya dengan menggunakan Alfa Siklodekstrin.

Tujuan Penelitian : Mengetahui adanya perbedaan, selisih rerata dan rerata selisih kadar trigliserida serum lipemik yang diolah dengan Alfa Siklodekstrin dan *High Speed* Sentrifugasi

Metode Penelitian : Jenis Penelitian ini adalah eksperimen murni dengan desain penelitian *Pretest-Posttest Control Group Design. Pretest.* Penelitian ini dilakukan di Laboratorium Kimia Klinik Jurusan Analis Kesehatan Poltekkes Kemenkes Yogyakarta pada bulan April 2019. Serum lipemik yang digunakan berjumlah 30 dengan kadar trigliserida diatas 300 mg/dL, kemudian di analisis statistik dengan *Paired Sampel T-Test* dan *Independent Sampel T-Test*.

Hasil Penelitian : Rerata selisih kadar trigliserida yang diolah dengan penambahan Alfa Siklodekstrin sebesar 273 mg/dL dan yang ditangani dengan *High Speed* Sentrifugasi sebesar 77 mg/dL. Hasil analisis *Paired Sample T-Test* diperoleh signifikansi sebesar 0,000 ($p<0,05$) yang berarti ada perbedaan yang bermakna kadar trigliserida serum lipemik sebelum dan sesudah ditangani *High Speed* Sentrifugasi. Sedangkan Independent Sampel T-Test diperoleh 0,000 ($p<0,05$) yang berarti ada perbedaan kadar trigliserida pada serum lipemik yang diolah dengan Alfa Siklodekstrin dan *High Speed* Sentrifugasi. Kemudain hasil langsung dan Alfa Siklodekstrin dikonversi ke High Speed Sentrifugasi dengan menambah 17 % dan 59 %.

Kesimpulan : Ada perbedaan kadar trigliserida serum lipemik yang diolah dengan Alfa Siklodekstrin dan *High Speed* Sentrifugasi, rerata selisih kadar trigliserida yang diolah dengan penambahan Alfa Siklodekstrin sebesar 273 mg/dL dan yang ditangani dengan *High Speed* Sentrifugasi sebesar 77 mg/dL, serta selisih rerata serum lipemik yang diolah dengan Alfa Siklodekstrin dan *High Speed* Sentrifugasi sebesar 273 mg/dL.

Kata Kunci : Alfa siklodekstrin, *high speed* sentrifugasi, trigliserida.