ABSTRACT

Background: Lipaemic serum is a cloudy serum, white like milk due to hyperlipidaemia. Lipaemic serum can interfere with many laboratory tests. Lipaemic serum lipid particles cause the spread of light to the highest level during the reading on photometry, causing inaccurate results. The gold standard for lipaemic serum treatment is ultracentrifugation but not all laboratories have the tools. Therefore, one of the alternatives for treating lipaemic serum with the precipitation method is using Gamma-Cyclodextrin.

Research Objective: To determine the difference in lipaemic serum cholesterol levels without and with the addition of Gamma-Cyclodextrin floculants at a concentration of 20% with an incubation of 23°C.

Research Method: The type of research is pre-experimental with One Group Pre-Post Test Design research design. The research was carried out in March 2025. The samples used were 16 samples (25 lipaemic serums) with Triglyceride levels > 300 mg/dL. from several hospitals in Jogjakarta. The results are statistically analysed using Paired Sample T-Test.

Research Results: Average lipaemic serum cholesterol levels without the addition of Gamma-Siclodextrin flocculants 20% concentration is 257 mg/dL while the average lipaemic serum cholesterol levels with the addition of 20% concentration of Gamma-Siclodextrin flocculants is 135 mg/dL. The results of the study showed that there was a difference in lipaemic serum cholesterol levels without and with the addition of Gamma-Siclodextrin flocculant ($p < 0,05$).

Conclusion: There is a difference in lipaemic serum cholesterol levels without and with the addition of Gamma-Siclodextrin flocculant concentration of 20% with 23°C incubation.

Keywords: Cholesterol, Gamma-Cyclodextrin, lipaemic serum

ABSTRAK

Latar Belakang: Serum lipemik merupakan serum yang keruh, berwarna putih seperti susu dikarenakan hiperlipidemia. Serum lipemik dapat mengganggu banyak pemeriksaan laboratorium. Partikel lipid serum lipemik menyebabkan penyebaran cahaya ke tingkat yang paling tinggi selama pembacaan pada fotonmetri sehingga menyebabkan hasil tidak akurat. Gold standart penanganan serum lipemik adalah ultrasentrifugasi tetapi tidak semua laboratorium memiliki alatnya. Oleh karena itu, salah satu alternatif penanganan serum lipemik dengan metode presipitasi menggunakan Gamma-Siklodekstrin.

Tujuan Penelitian: Mengetahui perbedaan kadar kolesterol serum lipemik tanpa dan dengan penambahan flokulan Gamma-Siklodekstrin konsentrasi 20% inkubasi 23°C.

Metode Penelitian: Jenis penelitian adalah pra-eksperimen dengan desain penelitian *One Group Pre-Post Test Design*. Penelitian ini menggunakan 25 sampel serum lipemik dengan kadar Trigliserida > 300 mg/dL. dari beberapa rumah sakit di Yogyakarta. Hasil dianalisis statistik menggunakan *Paired Sample T-Test*.

Hasil Penelitian: Rerata kadar kesterol serum lipemik tanpa penambahan flokulan Gamma-Siklodekstrin konsentrasi 20% sebesar 257 mg/dL sedangkan rerata kadar kolesterol serum lipemik dengan penambahan flokulan Gamma-Siklodekstrin konsentrasi 20% sebesar 135 mg/dL. Hasil penelitian menunjukkan ada perbedaan kadar kolesterol serum lipemik tanpa dan dengan penambahan flokulan Gamma-Siklodekstrin ($p < 0,05$).

Kesimpulan: Ada perbedaan kadar kolesterol serum lipemik tanpa dan dengan penambahan flokulan Gamma-Siklodekstrin konsentrasi 20% inkubasi 23°C.

Kata Kunci: Kolesterol, Gamma-Siklodekstrin, Serum Lipemik