

**PENGARUH PEMBERIAN KOMBINASI PROBIOTIK DAN KALSIMUM
KARBONAT TERHADAP KADAR KALSIMUM DAN KADAR FOSFOR
DARAH PADA PASIEN PENYAKIT GINJAL KRONIK STADIUM
AKHIR**

Studi di Unit Hemodialisa RS Rumah Sehat Terpadu Dompot Dhuafa Bogor

***THE EFFECT OF COMBINED PROBIOTICS AND CALCIUM CARBONAT
SUPPLEMENTATION ON BLOOD CALCIUM AND PHOSPHORUS
LEVELS IN PATIENTS WITH END STAGE RENAL DISEASE***

Study on Hemodialysis Unit at RS Rumah Sehat Terpadu Dompot Dhuafa Bogor



Tesis

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ABSTRAK

Latar Belakang: Penderita Penyakit Ginjal Kronik (PGK) stadium akhir pada umumnya mengalami gangguan metabolisme zat gizi seperti kalsium dan fosfor. Probiotik mampu meningkatkan keseimbangan mikroflora saluran pencernaan, sedangkan kalsium karbonat digunakan untuk penurunan asam dan mempertahankan keberadaan probiotik dalam lumen usus. Kombinasi probiotik dan kalsium karbonat mampu meningkatkan kadar kalsium dan menurunkan kadar fosfor.

Tujuan: Menganalisis pengaruh pemberian kombinasi probiotik dan kalsium karbonat terhadap kadar kalsium dan kadar fosfor darah.

Metode: Penelitian *true experiment* dengan rancangan *randomized pre-post test control group design* yang melibatkan 24 subjek yang dibagi menjadi 2 kelompok secara acak. Kelompok perlakuan diberikan probiotik (4.0×10^9 CFU) dan kalsium karbonat 500mg x 3 per hari, sedangkan kelompok kontrol hanya diberikan kalsium karbonat sebagai pengobatan standar. Analisis statistik yang dilakukan adalah uji *Paired t-test*, *Independent t-test*, *Mann Whitney*, dan *general linear model repeated measure*.

Hasil: Kelompok perlakuan menunjukkan peningkatan kadar kalsium secara bermakna ($p=0,02$). Kadar kalsium pada kelompok perlakuan meningkat 0,9 g/dl, atau lebih tinggi dibandingkan pada kelompok kontrol 0,7 g/dl. Analisis statistik menunjukkan pada kelompok perlakuan terjadi penurunan kadar fosfor namun tidak signifikan pada kelompok perlakuan ($p=0,87$) dan kelompok kontrol ($p=0,06$). Kadar fosfor responden pada kelompok kontrol menurun 0,7 g/dl, atau lebih tinggi dibandingkan pada Kelompok perlakuan 0,1 g/dl.

Kesimpulan: Kombinasi probiotik dan kalsium karbonat meningkatkan kadar kalsium dan menurunkan kadar fosfor, namun penurunan kadar fosfor tidak bermakna.

Kata Kunci: Probiotik, kalsium karbonat, ESRD, kadar fosfor, kadar kalsium

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THE EFFECT OF COMBINED PROBIOTICS AND CALCIUM CARBONATE SUPPLEMENTATION ON THE CALCIUM AND PHOSPHORUS LEVELS IN PATIENTS WITH END STAGE RENAL DISEASE

Study on Hemodialysis at RS Rumah Sehat Terpadu Dompot Dhuafa Bogor

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ABSTRACT

Introduction: In general Patients with EndStage Renal Disease (ESRD) have metabolic disorders of nutrients such as calcium and phosphorus. Probiotics are able to improve the balance of gastrointestinal microflora, while calcium carbonate is used to decrease acid. It maintain probiotics in the intestinal lumen. The combination of probiotics and calcium carbonate can increase calcium levels and decrease phosphorus levels.

Objective: To analyze the effect of combined probiotics and calcium carbonate supplementation on the calcium and phosphorus levels

Methods: A true experiment study use a randomized pre-post test. In control group design were 24 subjects divided into 2 groups at random. The treatment group was given probiotics (4.0×10^9 CFU) and calcium carbonate 500mg x 3 each day, while the control group was given calcium carbonate as the standard treatment. Statistical analyzes use paired t-test, independent t-test, Mann Whitney and general linear model repeated measure.

Result: The treatment group increase significant of calcium level ($p=0,02$). Calcium levels in the treatment group increased 0.9 g/dl, It is higher than the control group 0.7 g/dl. Statistical analysis describe that in the treatment group was a decrease of phosphorus level but it does'nt significant. In treatment group ($p=0,87$) and control group ($p=0,06$). Phosphorus levels of subjects in the control group decreased 0.7 g/dl. It is higher than in the treatment group of 0.1 g/dl.

Conclusion: The combination of probiotics and calcium carbonate increases calcium levels and decreases phosphorus levels, but phosphorus levels decrease are not significant.

Key words: Probiotic, calcium carbonate, ESRD, phosphorus levels, calcium levels

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