

FORMULATION OF ENTERAL FOOD LOW IN PROTEIN FOR CHRONIC KIDNEY FAILURE (CKD) PRE-DIALYSIS PATIENTS AT RSUD PROF DR MARGONO SOEKARJO PURWOKERTO

Annisa Endah Dwi Kurnia¹, Setyowati², Lastmi Wayansari³
^{1,2,3} Nutrition Department of Poltekkes Kemenkes Yogyakarta
Jl. Tata Bumi No. 3 Banyuraden, Gamping, Sleman
email: cacaedk@gmail.com

ABSTRACT

Background: Chronic kidney disease (CKD) is increasingly prevalent in Indonesia and affects kidney function. A low-protein diet can help maintain kidney function in CKD patients. The provision of enteral nutrition becomes an option when nutritional needs cannot be met. Therefore, it is important to develop a low-protein hospital enteral formula (FERS).

Objective: To obtain a low-protein hospital enteral formula (FERS) for pre-dialysis Chronic Kidney Disease (CKD) patients as an alternative to commercial enteral formulas (FEK).

Method: This study uses the Research and Development (R&D) method, which is a series of steps to develop or improve existing products. The research design applied is descriptive-comparative. In the context of this research, a comparison is made between two types of enteral formulas: commercial enteral formula (FEK) and hospital enteral formula (FERS).

Results: Development of a low-protein enteral formula for pre-dialysis chronic kidney disease (CKD) patients with the addition of local ingredients, namely melon and chayote. Osmolarity testing showed that the hospital enteral formula (FERS) has a value that meets the standard, which is 404 mOsm/L. Hedonic testing showed that the panelists liked the taste, color, consistency, and aroma of this formula. The triangle test proved a significant difference in the quality attributes of taste, color, viscosity, and aroma between the hospital enteral formula (FERS) and the commercial one. The nutritional content of the hospital enteral formula (FERS) is similar to that of the commercial enteral formula (FEK), which is 289.5 kcal of energy, 4.8 g of protein, 9.4 g of fat, 42.5 g of carbohydrates, 234 mg of potassium, and 79 mg of sodium. The food cost of the hospital enteral formula (FERS) is cheaper (Rp 3,637 per serving) compared to the commercial enteral formula (FEK) (Rp 27,600 per serving).

Conclusion: This research successfully developed a low-protein enteral formula product for patients with chronic kidney disease (CKD). The results show that the low-protein hospital enteral formula (FERS) can be an effective and economical alternative in meeting the nutritional needs of CKD patients.

Keywords: Enteral nutrition, low protein, chronic kidney disease (CKD).

**FORMULASI MAKANAN ENTERAL RUMAH SAKIT RENDAH
PROTEIN UNTUK PASIEN GAGAL GINJAL KRONIS (GGK) PRA
DIALISIS DI RSUD PROF DR MARGONO SOEKARJO PURWOKERTO**

Annisa Endah Dwi Kurnia¹, Setyowati², Lastmi Wayansari³
^{1,2,3}Jurusan Gizi Poltekkes Kemenkes Yogyakarta
Jl. Tata Bumi No. 3 Banyuraden, Gamping, Sleman
email: cacaedk@gmail.com

ABSTRAK

Latar Belakang: Gagal ginjal kronis (GGK) semakin meningkat di Indonesia dan mempengaruhi fungsi ginjal. Diet rendah protein dapat membantu mempertahankan fungsi ginjal pasien GGK. Pemberian makanan enteral menjadi pilihan ketika kebutuhan gizi tidak bisa terpenuhi. Oleh karena itu, penting untuk mengembangkan formula enteral rumah sakit (FERS) rendah protein.

Tujuan Penelitian: Mendapatkan formula enteral rumah sakit (FERS) rendah protein untuk pasien Gagal Ginjal Kronis (GGK) pra dialisis sebagai alternatif pengganti formula enteral komersial (FEK).

Metode Penelitian: Penelitian ini menggunakan metode jenis *Research and Development* (R&D) yang merupakan serangkaian langkah untuk mengembangkan atau menyempurnakan produk yang sudah ada. Desain penelitian yang diterapkan adalah deskriptif-komparatif. Dalam konteks penelitian ini, perbandingan dilakukan antara dua jenis formula enteral: formula enteral komersial (FEK) dan formula enteral rumah sakit (FERS).

Hasil Penelitian: Pembuatan formula enteral rendah protein untuk pasien gagal ginjal kronis (GGK) pra-dialisis dengan penambahan bahan lokal yaitu melon dan labu siam. Pengujian osmolaritas menunjukkan bahwa formula enteral rumah sakit (FERS) memiliki nilai yang sesuai dengan standar, yaitu 404 mOsm/L. Uji hedonik menunjukkan bahwa panelis menyukai rasa, warna, kekentalan, dan aroma formula ini. Uji *triangle* membuktikan adanya perbedaan nyata dari atribut mutu rasa, warna, kekentalan, dan aroma antara formula enteral rumah sakit (FERS) dan komersial. Kandungan gizi formula enteral rumah sakit (FERS) mendekati formula enteral komersial (FEK) yaitu energi 289,5 kkal, protein 4,8 g, lemak 9,4 g, karbohidrat 42,5 g, kalium 234 mg, natrium 79 mg. *Food Cost* formula enteral rumah sakit (FERS) lebih murah (Rp 3.637 per porsi) dibandingkan formula enteral komersial (FEK) (Rp 27.600 per porsi).

Kesimpulan: Penelitian ini berhasil membuat produk formula enteral rendah protein untuk pasien gagal ginjal kronis (GGK). Hasil menunjukkan bahwa formula enteral rumah sakit (FERS) rendah protein dapat menjadi alternatif yang efektif dan ekonomis dalam pemenuhan gizi pasien GGK.

Kata Kunci: Makanan enteral, rendah protein, gagal ginjal kronis (GGK).