

## INTISARI

### PENGARUH KOMBINASI TERAPI HEMODIALISIS HEMOPERFUSI TERHADAP PENURUNAN KADAR LEPTIN PADA PASIEN PENYAKIT GINJAL TAHAP AKHIR YANG MENJALANI HEMODIALISIS RUTIN: MULTI CENTER STUDY

Ilsya Asti Naraswari<sup>1</sup>, Metalia Puspitasari<sup>2</sup>, Yulia Wardhani<sup>3</sup>

<sup>1</sup>Program Pendidikan Dokter Spesialis Penyakit Dalam, Departemen Ilmu Penyakit Dalam Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan Universitas Gadjah Mada

<sup>2</sup>Devisi Ginjal dan Hipertensi, Departemen Ilmu Penyakit Dalam Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan Universitas Gadjah Mada

<sup>3</sup>Devisi Ginjal dan Hipertensi, Departemen Ilmu Penyakit Dalam Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan Universitas Gadjah Mada

**Latar belakang:** Pembersihan leptin selama hemodialisis konvensional ditemukan minimal atau bahkan absen, namun beberapa peneliti melaporkan pada HD high-flux efektif menurunkan konsentrasi leptin, namun data yang tersedia terbatas. Leptin telah dilaporkan sebagai penanda inflamasi, komplikasi jangka panjang seperti kejadian kardiovaskular dan berujung buruknya kualitas hidup meningkat. Terapi kombinasi HD+HP telah dilaporkan secara efektif menurunkan konsentrasi toksin *middle-sized* dan macromolecular. Pada penelitian ini membandingkan terapi HD (high flux) dan kombinasi HD+HP dalam efektifitas membersihkan kadar serum leptin, yang diharapkan menurunkan kejadian kardiovaskuler pada pasien PGTA.

**Tujuan:** Menilai pengaruh kombinasi terapi HD+HP terhadap penurunan kadar leptin pada pasien hemodialisis rutin

**Metode:** Penelitian *quasi experimental* dengan pengukuran *pre* dan *post exposure* pada 26 pasien PGTA yang menjalani HD rutin di tiga *site* rumah sakit sesuai kriteria inklusi yang dibagi menjadi kelompok intervensi (Hemodialisis 2x/minggu + Hemoperfusi 1x/minggu) dan kelompok kontrol (HD tunggal 2x/minggu). Kadar serum leptin dibandingkan sebelum dan sesudah 8 minggu terapi dilakukan. Perbedaan penurunan kadar serum leptin kemudian dibandingkan dari setiap kelompok terapi dengan menggunakan selisih nilai *pre* dan *post* terapi (nilai delta).

**Hasil:** Kadar leptin signifikan menurun ( $p = 0.017$ ) pada kelompok kontrol (HD *High-Flux*). Terapi kombinasi HD+HP dapat menurunkan kadar leptin namun tidak bernilai signifikan ( $p = 0.784$ ). Tidak terdapat perbedaan signifikan perbandingan kelompok HD tunggal dan kombinasi HD+HP dalam menurunkan kadar serum leptin ( $p = 0.258$ ).

**Kesimpulan:** Terapi HD+HP 1x/minggu selama 8 minggu tidak lebih efektif dalam menurunkan kadar serum leptin dibandingkan terapi HD tunggal *high-flux* saja.

**Kata kunci:** Hemodialisis Hemoperfusi, Leptin

## ABSTRACT

### EFFECT OF COMBINATION HEMODIALYSIS HEMOPERFUSION ON LOWERING LEPTIN LEVEL IN PATIENTS WITH END-STAGE RENAL DISEASE RECEIVING ROUTINE HEMODIALYSIS: *MULTI CENTER STUDY*

Ilsya Asti Naraswari<sup>1</sup>, Metalia Puspitasari<sup>2</sup>, Yulia Wardhani<sup>3</sup>

<sup>1</sup>Internal Medicine Specialist Education Program, Department of Internal Medicine, Faculty of Medicine, Public Health and Nursing, Gadjah Mada University

<sup>2</sup>Kidney and Hypertension Division, Department of Internal Medicine, Faculty of Medicine, Public Health and Nursing, Gadjah Mada University

<sup>32</sup>Kidney and Hypertension Division, Department of Internal Medicine, Faculty of Medicine, Public Health and Nursing, Gadjah Mada University

**Background:** Leptin clearance during conventional hemodialysis has been found to be minimal or absent, some authors reported the possibility of decreasing leptin serum levels with high flux membranes, but data are limited available. As leptin has been reported as a marker of inflammation, long-term complications such as cardiovascular events and poor quality of life. HD+HP has been reported to effectively decrease middle-sized and macromolecular toxin concentrations. In the present study, we compared the effectiveness of High flux HD and HD + HP can effectively remove serum leptin levels, and is expected to reduce cardiovascular events in ESRD patients.

**Objective:** To assess the influence of HD+HP therapy on serum leptin level in routine hemodialysis patients

**Method:** Quasi experimental with pre and post exposure measurements in 26 ESRD patients who received routine HD at three hospital sites were selected according to inclusion criteria and divided into intervention group (HD 2x/week + Hemoperfusion 1x / week) and control group (HD 2x /week). Serum leptin levels were compared before and after 8 weeks of therapy, and differences were then compared from each group.

**Results:** Leptin levels reduced significantly ( $p = 0.017$ ) in the control group (High-Flux HD). Serum leptin levels decreased in HD+HP group but there was no significant differences ( $p = 0.784$ ). Significant differences were not observed between two modalities (HD and HD+HP) ( $p = 0.258$ ).

**Conclusion:** Hemodialysis plus Hemoperfusion once a week for 8 weeks was not found effectively lowering leptin level compared High-flux HD alone.

**Keywords:** Hemodialysis, Hemoperfusion, Leptin