

RINGKASAN

ANALISIS PEMBERIAN NUTRISI PARENTERAL TERHADAP KADAR GULA DARAH PASIEN GERIATRI

(Penelitian dilakukan di IRNA Geriatri RSUP Sanglah Denpasar)

Nutrisi parenteral (PN) merupakan salah satu strategi untuk mengatasi masalah malnutrisi pada pasien geriatri di RS. Namun pemberian PN memiliki beberapa komplikasi, salah satu yang umum terjadi adalah hiperglikemia. Pasien geriatri beresiko mengalami hiperglikemia karena penurunan fungsi sel beta pankreas, multipel penyakit dan beresiko mengalami stres yang memicu pelepasan hormon kontra regulasi dan pelepasan sitokin proinflamasi dan menginduksi resistensi insulin serta hiperglikemia.

Penelitian ini bertujuan untuk menganalisis pemberian nutrisi parenteral terhadap kadar GDA dan pengaruh terhadap kejadian hiperglikemia pada pasien geriatri. Penelitian ini dilakukan dengan desain prospektif observasional di IRNA Geriatri RSUP Sanglah Denpasar selama 3 bulan yaitu Januari-Maret 2019. Kriteria inklusi adalah pasien geriatri (≥ 60 tahun) yang mendapat nutrisi parenteral, tidak didiagnosa dengan diabetes Melitus dan kadar GDA sebelum pemberian PN < 180 mg/dL. Jumlah pasien yang memenuhi kriteria inklusi 38 pasien dengan 43 pemberian nutrisi parenteral.

Hasil uji statistik menggunakan paired t-test antara kadar GDA sebelum dan 6 jam setelah pemberian PN terdapat perbedaan yang signifikan ($p < 0,05$). Berdasarkan jenis nutrisi peningkatan kadar GDA pada 6 jam setelah pemberian PN lebih tinggi pada nutrisi parenteral “3 in 1” yaitu $17,6 \pm 42,0$ mg/dl dibandingkan dengan “2 in 1” yaitu $12,1 \pm 39,8$ mg/dl, meski secara statistik tidak bermakna ($p > 0,05$). Dari hasil studi diperoleh 14 kejadian hiperglikemia (kadar GDA > 180 mg/dl) dengan presentase 7,2 % dari 193 pemeriksaan GDA. Berdasarkan jumlah pasien, terdapat 11 dari 38 pasien (29%) yang mengalami minimal satu kali kejadian hiperglikemia selama pemberian nutrisi parenteral.

Penggunaan obat yang meningkatkan kadar gula darah seperti golongan kortikosteroid dan norepinefrin merupakan faktor resiko hiperglikemia pada pasien geriatri yang mendapatkan nutrisi parenteral (OR 15,95; 95%CI 1,20-211,09, $p = 0,036$). Faktor resiko lain adalah pemberian nutrisi enteral, pankreatitis, *renal impairment*, infeksi dan kondisi stres. Perlu dilakukan monitoring gula darah terhadap pasien geriatri yang mendapatkan nutrisi parenteral yang beresiko mengalami hiperglikemia.

ABSTRACT

ANALYSIS OF PARENTERAL NUTRITION ON BLOOD GLUCOSE LEVELS IN GERIATRIC PATIENTS (Study at Geriatric Department , Sanglah General Hospital Denpasar)

Background: The beneficial effect of parenteral nutrition (PN) in improving the nutritional status of malnourished patients have been well established. However, many trials have reported PN associated complications especially hyperglycemia. Geriatrics are at high risk for the development of hyperglycemia due to impaired β cell function, multiple diseases and stress conditions, leading to reduced insulin secretion and insulin resistance.

Objective: This study aims to analyze the effect of parenteral nutrition on blood glucose levels and the prevalence of hyperglycemia in geriatric patients.

Method: A prospective observational design was conducted in this study. The blood glucose measured before and daily while receiving parenteral nutrition. Data was collected at the period of January to March 2019. The inclusion criteria were geriatric patients (≥ 60 years) who received parenteral nutrition, were not diagnosed with diabetes mellitus and blood glucose levels before administration of PN <180 mg/dL.

Results: This study included 38 patients with 43 parenteral nutrition prescription. Using paired t-test analysis, there were significant differences between blood glucose levels before and 6 hours after administration of PN ($p < 0,05$). Based on the type of nutrition, the increase in blood glucose levels at 6 hours after administration of PN was higher in "3 in 1" 17.6 ± 42.1 mg/dL compared with "2 in 1" which was $12.1 \pm 39,8$ mg/dL, although not statistically significant ($p > 0,05$). There were 14 (7,2%) cases of hyperglycemia (blood glucose levels > 180 mg / dl) from 193 blood glucose measurement. During PN therapy, 11 patients (29%) had at least one hyperglycemia event. Predisposing factor were glucose-elevating drugs (OR 15.95; 95%CI 1.20-211.09; $p = 0,036$), enteral nutrition, infectious complication, and renal impairment.

Conclusion: The prevalence oh hyperglycemia in geriatric patients receiving parenteral nutrition is quite high. It s recommended to monitor blood glucose in geriatric patients who had risk factors of hyperglycemia with parenteral nutrition.

Keywords: parenteral nutrition, blood glucose levels, hyperglycemia, geriatric, elderly