

# Perbandingan efek protokol manajemen hipoglikemia dengan larutan pekat dekstrosa 40% secara intravena infus dan intravena bolus terhadap respon gula darah pascakoreksi = Comparison of effects of the hypoglycemia management protocol with 40% dextrose concentrated solution to the post-correction blood sugar response through intravenous infusion and intravenous bolus

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## Abstrak

Pasien hipoglikemia yang menerima larutan pekat dekstrosa 40% (D40%) dalam proses koreksinya perlu menghindari lonjakan gula darah yang berlebihan. Cara pemberian D40% ditemukan diberikan dengan dua cara yang berbeda, melalui intravena infus (iv infus) dan intravena bolus (iv bolus), dan efek dari kedua jenis pemberian tersebut belum diketahui. Tujuan dari penelitian analitik komparatif secara potong lintang ini adalah membandingkan efek protokol manajemen hipoglikemia dengan larutan pekat D40% secara iv infus dan iv bolus terhadap respon gula darah pascakoreksi di dua rumah sakit dengan protokol yang berbeda. Penelitian dilakukan secara retrospektif di RS St. Carolus (kelompok iv infus D40%) dan RS Bella (kelompok iv bolus D40%). Respon gula darah, dalam bentuk koefisien variasi dan derajat overkoreksi, dibandingkan antara kedua kelompok. Median kenaikan gula darah pada kelompok iv infus D40% 69,5 (3-195) mg/dl (n=60 pasien) dan kelompok iv bolus D40% 77 (15-249) mg/dl (n=62 pasien) (p=0,259). Koefisien variasi dengan iv infus adalah 47,18% dan iv bolus 52,75%. Median derajat overkoreksi iv infus D40% lebih rendah dibandingkan dengan iv bolus D40%, dengan masing-masing 10% (0-138%) dan 23% (0-195%). Kedua cara pemberian D40% tidak memiliki hubungan yang bermakna dengan derajat overkoreksi (Uji Mann-whitney; p=0,099). Pemberian iv infus dan bolus D40% tidak memiliki pengaruh terhadap respon gula darah pascakoreksi.

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Hypoglycemic patients who receive 40% dextrose (D40%) concentrated solution in the correction process need to avoid excessive blood glucose spikes. Administration of D40% was found in two different ways, through intravenous infusion (iv infusion) and intravenous bolus (iv bolus) and the effects of both types of administration were unknown. The purpose of this comparative cross-sectional study was to compare the effect of a hypoglycemia treatment protocol using D40% concentrated solution to the post-correction blood sugar response through iv infusion and iv bolus at two different hospitals with two distinct protocols. The study was conducted retrospectively at St. Carolus Hospital (D40% iv infusion group) and Bella Hospital (D40% iv bolus group). Blood glucose response, in form of coefficient of variation and degree of overcorrection, were compared between groups. The overall median blood glucose response was 69,5 (3-195) mg/dl for iv infusion group (n=60) and 77 (15-249) mg/dl for iv bolus group (n=62) (p=0,259). The coefficient of variation with iv infusion and iv bolus group were 47,18% and 52,75%, respectively. The median of degree of overcorrection in iv infusion group was lower compared with iv bolus group, 10% (0-138%) versus 23% (0-195%), respectively. Both D40% protocols did not have a significant correlation with the degree of overcorrection (Mann-whitney test; p=0,099). D40% iv infusion and bolus administration had no effect to the post-correction blood sugar response.