Hubungan variabilitas glukosa 72 jam pertama dengan mortalitas upi pada pasien kritis = Association between glucose variability in the first 72 hour with icu mortality in critically ill patients

Elizabeth Yasmine Wardoyo, author

Abstrak

Latar Belakang. Hiperglikemia pada perawatan pasien kritis merupakan faktor risiko yang dapat ditatalaksana dengan optimal untuk menurunkan mortalitas. Hubungan variabilitas glukosa dengan mortalitas telah diteliti menggunakan indikator yang bervariasi.
Tujuan. Mengkaji hubungan variabilitas glukosa yaitu rerata perubahan glukosa absolut (mean absolute glucose change, MAG) dan simpang baku glukosa terhadap mortalitas pasien kritis.
Metode. Penelitian kohort retrospektif terhadap 280 pasien yang dirawat di Unit Perawatan Intensif RSCM pada periode Januari 2012-Agustus 2013. Variabel MAG dan simpang baku glukosa dibagi menjadi 4 kuartil. Analisis hubungan antara MAG dan simpang baku glukosa dengan mortalitas dilakukan dengan uji X2. Untuk mengeluarkan faktor perancu (skor MSOFA, indeks komorbiditas Charlson, hipoglikemia, dan hiperglikemia) dilakukan uji regresi logistik.
Hasil. Nilai median MAG adalah 3,3 mg/dL/jam dan nilai median simpang baku glukosa adalah 38,3 mg/dL Insiden mortalitas lebih tinggi didapatkan pada kuartil atas MAG dan simpang baku glukosa dibandingkan kuartil bawah. Dari uji Chi Square didapatkan hasil OR MAG kuartil atas terhadap mortalitas OR 4,26 (IK 95% 1,98-9,15) dan OR simpang baku glukosa kuartil atas terhadap mortalitas OR 2,78 (IK 95% 1,35-5,71). Setelah dilakukan uji regresi logistik didapatkan fully adjusted OR 3,34 (IK 95% 1,08-10,31) untuk MAG dan 0,90 (IK 95% 0,28-2,88) untuk simpang baku glukosa.
Simpulan. Insiden mortalitas pasien dengan MAG tinggi lebih besar daripada pasien dengan MAG paling rendah. Proporsi mortalitas simpang baku glukosa tinggi (>59 mg/dL) lebih besar daripada pasien dengan simpang baku glukosa paling rendah, namun perbedaan tersebut tidak bermakna secara statistik.
.....
Background. Hyperglycemia in critically-ill patient is a risk factor that can be managed in order to reduce mortality. Inspite of hyperglycemia, glucose variability also brings negative outcome to cells. Studies about glucose variability effect to mortality had been studied using many variables of glucose variability.
Objective. Analyze association between glucose variability (mean absolute glucose change [MAG] and glucose standard deviation) with mortality in critically-ill patients.
Methods. Retrospective cohort study is done to 280 critical ill patient in ICU and HCU in Cipto Mangunkusumo Hospital who admitted to critical care between January 2012-August 2013. MAG change and glucose standard deviation are divided into 4 quartiles. Association between MAG change and glucose standard deviation are analyzed using X2 test. To control the confounders (MSOFA score, Charlson comorbidities index, hypoglycemia, and hyperglycemia), logistic regression is done.
Result. Median of MAG change is 3.3 mg/dL/hour and median of glucose standard deviation is 37.63 mg/dL. Mortality incidence is higher in upper quartile of MAG change and glucose standard deviation compared to lower quartile. OR of upper quartile MAG change to ICU mortality is OR 4.26 (95% CI 1.98-9.15) and OR of upper quartile glucose standard deviation to ICU mortality is OR 2.78 (95% CI 1.35-5.71).

These results are adjusted to MSOFA score, hypoglycemia, and hyperglycemia. In logistic regression test, fully adjusted OR are 3.34 (95% CI 1.08-10.31) and 0.90 (95% CI 0.28-2.88) for MAG change and glucose standard deviation, respectively.

Conclusion. Mortality incidence in patient with high MAG is larger than in patient with lowest MAG change. Mortality incidence in patient with high glucose standard deviation is larger than in patient with lowest glucose standard deviation, but the difference is not statistically significant.