

Peran resistensi insulin terhadap disfungsi sistolik vki subklinis pada sindrom metabolik = The role of insulin resistance to subclinical left ventricle systolic dysfunction in metabolic syndrome

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Abstrak

ABSTRAK

Latar Belakang. Disfungsi miokardial subklinis merupakan salah satu konsekuensi berbahaya dari sindrom metabolik, dimana diduga disebabkan oleh resistensi insulin. Kelainan tersebut merupakan kondisi patologis awal, yang berisiko menimbulkan gagal jantung ke depannya. Melalui Two Dimensional-Speckle Tracking Echocardiography 2D-STE dengan parameter Global Longitudinal Strain GLS yang memiliki sensitivitas dan spesifisitas tinggi, disfungsi miokardial tersebut dapat dideteksi lebih dini. Tujuan Mengetahui hubungan antara resistensi insulin pada sindrom metabolik terhadap disfungsi sistolik VKi subklinis. **Metode.** Studi ini merupakan studi potong lintang, dengan menggunakan 483 datasekunder dari pegawai RS Jantung Harapan Kita. Dari total data, 119 subjek masuk dalam kriteria inklusi dan eksklusi, yang kemudian dilakukan pemeriksaan GLS. Subjek tersebut terbagi menjadi dua kelompok non resistensi insulin dan resistensi insulin berdasarkan nilai Homeostasis Model Assessment of Insulin Resistance HOMA-IR dengan nilai cut-off 2.0. **Hasil.** Terdapat perbedaan nilai GLS yang bermakna antara kelompok resistensi insulin dan non resistensi insulin rerata $-18.3 \text{ SD } 3.05$ vs $-19.7 \text{ SD } 2.2$, $95 \text{ IK } -2.39$ ndash; -0.37 , $p=0.008$. Variabel resistensi insulin memiliki risiko terbesar diikuti variabel trigliserida adjusted OR 2.8, $p=0.009$ dan 2.4, $p=0.03$ secara berurutan terhadap disfungsi sistolik VKi subklinis pada sindrom metabolik. **Kesimpulan.** Resistensi insulin menunjukkan fungsi sistolik VKi yang lebih rendah secara signifikan yang dinyatakan dengan nilai GLS dibandingkan nonresistensi insulin pada sindrom metabolik. Resistensi insulin dan trigliserida adalah petanda independen disfungsi sistolik VKi subklinis diantara komponen sindrom metabolik lain. **Kata kunci.** resistensi insulin, HOMA-IR, disfungsi sistolik VKi subklinis, GLS, sindrom metabolik, trigliserida

ABSTRACT

Background. Subclinical myocardial dysfunction is a dangerous consequence of the metabolic syndrome, which is thought to be caused by insulin resistance. The disorder is an early pathological condition, which poses a risk of heart failure in the future. Through Two Dimensional Speckle Tracking Echocardiography 2D STE with the Global Longitudinal Strain GLS parameters that have high sensitivity and specificity, these myocardial dysfunctions can be detected earlier. **Objective.** To determine the relationship between insulin resistance in metabolic syndrome to subclinical left ventricle systolic dysfunction. **Methods.** A cross sectional study, using 483 secondary data from employees of the National Heart Center of Harapan Kita. 119 subjects were included in the inclusion and exclusion criteria, which were performed 2D STE with GLS parameter. The subjects were divided into two groups of non insulin resistance and insulin resistance based on the value of Homeostasis Model Assessment of Insulin Resistance HOMA IR with a cut off value of 2.0. **Results.** There were significant differences in GLS values between the insulin resistance group and non insulin resistance mean $18.3 \text{ SD } 3.05$ vs $19.7 \text{ SD } 2.2$, $95 \text{ CI } 2.39$ 0.37 , $p 0.008$. Insulin resistance have the greatest risk followed by triglyceride levels adjusted OR 2.8, $p 0.009$ and 2.4, $p 0.03$ respectively to subclinical left ventricle systolic dysfunction in the metabolic syndrome. **Conclusion.** Insulin resistance showed a lower left ventricle systolic function as expressed by GLS score significantly than non insulin resistance in the

metabolic syndrome. Insulin resistance and triglycerides are an independent marker of subclinical left ventricle systolic dysfunction among other components of the metabolic syndrome.