Prevalens resistensi Insulin pada remaja Obes = Prevalence of Insulin resistance in Obese adolescents

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Abstrak

Latar Belakang. Obesitas pada anak merupakan masalah kesehatan global. Prevalens obesitas berbeda di setiap negara dan dipengaruhi oleh beberapa faktor, seperti pola hidup dan aktivitas fisik. Resistensi insulin (RI) sebagai dasar utama kelainan metabolik pada obesitas merupakan dasar terjadinya sindrom metabolik (SM) serta komplikasi jangka panjang seperti diabetes melitus (DM) tipe 2 dan penyakit kardiovaskular (PKV). Berbagai faktor mempengaruhi terjadinya RI seperti jenis kelamin dan riwayat penyakit dalam keluarga, serta petanda akantosis nigrikan (AN) yang merupakan faktor prediktor RI.

Tujuan. Mengetahui prevalens RI pada remaja obes serta faktor-faktor yang mempengaruhinya, seperti jenis kelamin, AN, dan riwayat penyakit dalam keluarga. Selain itu juga, penelitian ini bertujuan untuk mengetahui prevalens dan karakteristik remaja dengan SM.

Metode. Penelitian potong lintang dilakukan pada remaja obes berusia 12-15 tahun di SMP di Jakarta Pusat selama periode Mei-Juni 2012. Dilakukan pemeriksaan darah berupa glukosa puasa, insulin puasa, serta profil lipid. Kriteria obesitas menggunakan IMT ≥P95 berdasarkan usia dan jenis kelamin, definisi RI berdasarkan indeks HOMA-IR ≥3,8 dan diagnosis SM berdasarkan kriteria IDF 2007.

Hasil. Sebanyak 92 remaja obes diikutsertakan dalam penelitian. Resistensi insulin terjadi pada 38% subyek, dengan mayoritas perempuan (57,2%), mempunyai AN (71,4%), dan riwayat keluarga (82,8%), seperti obesitas, DM tipe 2, dan hipertensi. Sebanyak 8,6% remaja mengalami prediabetes, namun tidak ditemukan DM tipe 2. Tidak ditemukan hubungan yang bermakna secara statistik antara jenis kelamin, riwayat keluarga, dan AN dengan RI (p>0,05). Angka kejadian SM ditemukan sebesar 19,6% dengan mayoritas perempuan (61,1%), serta adanya riwayat obesitas dalam keluarga. Prevalens komponen SM yaitu hipertensi 34,8%, obesitas sentral 78,3%, glukosa puasa terganggu 8,7%, rendahnya kadar HDL 22,8%, dan tingginya kadar trigliserida 21,7%. Ditemukan adanya korelasi positif antara RI dan glukosa puasa terganggu (p=0,04).

Simpulan. Resistensi insulin pada remaja obes ditemukan sebesar 38%, dan tidak ditemukan adanya hubungan antara jenis kelamin, AN, dan riwayat keluarga dengan RI. Sindrom metabolik terdapat pada 19,6% remaja dengan mayoritas perempuan, menderita hipertensi, serta adanya riwayat obesitas dalam keluarga.
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Background. Childhood obesity is a global health problem. The prevalence of childhood obesity is differed in each country and this is affected by many factors, such as lifestyle and physical activity. Insulin resistance (IR) as a basic mechanism of several metabolic diseases in obesity, is also a basic of metabolic syndrome

with its long term complications, such as type 2 diabetes mellitus (T2DM) and coronary heart disease (CHD). Several factors are known to be associated with IR, such as gender and family history of metabolic diseases, and the presence of acanthosis nigricans (AN)is known as a predicting factor of IR.

Objectives. To know the prevalence of IR in obese adolescents and the affecting factors, such as gender, signs of AN, and family history of metabolic diseases. Moreover, to know the prevalence and characteristics of obese adolescents with metabolic syndrome (MetS).

Methods. This was a cross-sectional study performed in obese adolescents, aged 12-15 years old, in several junior high schools in Central Jakarta, from May to June 2012. Blood examination was performed, including blood fasting glucose, blood fasting insulin, and lipid profile. Body mass index with the percentile ≥95 according to age and gender was used for obesity criteria; HOMA-IR ≥3.8 was used to define IR; and IDF criteria 2007 for MetS diagnosis.

Results. Of 92 obese adolescents in this study, IR was found in 38% subjects, with female predominant (57.2%), had signs of AN (71.4%), and a positive family history of metabolic diseases (82.8%), such as obesity, T2DM, and hypertension. Less than 10% adolescents suffered from prediabetes state as measured with impaired fasting glucose (IFG), but none type 2 DM. There was no statistical significant found between gender, family history, sign of AN and IR ($p>0.05$). The incidence of MetS was 19.6% with female predominant (61.1%), and had a family history of obesity. The prevalence of each components of MetS was 34.8% for hypertension, 78.3% for central obesity, 8.7% for IFG, 22.8% for low levels of HDL, and 21.7% for high triglyceride level. There was a strong correlation found between IR and IFG ($p=0.04$).

Conclusion. Insulin resistance has a prevalence of 38% in obese adolescent in this study, with no association found between gender, AN, family history and IR. Metabolic syndrome is found in 19.6% with the majority are females, suffered from hypertension, and having obesity in family history.