

Perbandingan Komponen Sindrom Metabolik. Homa-ir dan Lipocalin-2 antara Subyek Remaja Akhir di Urban dan Rural = Comparison of Metabolic Syndrome, Homa-ir, and Lipocalin-2 among Late Adolescent in Urban and Rural Area.

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Abstrak

Latar Belakang: Selain usia, prevalensi sindrom metabolik (SM) dipengaruhi oleh perbedaan tempat tinggal. Perubahan pola asupan makan yang dipengaruhi laju urbanisasi dipercaya memicu terjadinya inflamasi usus. Lipocalin-2 (LCN-2) merupakan petanda baru yang banyak diteliti dalam inflamasi usus serta penyakit kardiovaskular. Penelitian ini bertujuan membandingkan resistensi insulin (HOMA-IR), sindrom metabolik, dan LCN-2 pada dewasa muda di urban dan rural serta mencari korelasi antara HOMA-IR dan LCN-2.

Metode: Penelitian dengan desain potong lintang ini dilakukan tahun 2018-2019 pada 475 mahasiswa berusia 18-20 tahun. Data yang dikumpulkan meliputi antropometri, glukosa darah puasa, insulin puasa, profil lipid dan kadar LCN2 serum. Setelah menjalani wawancara dan pemeriksaan fisik, sampel darah disimpan pada suhu khusus (-800C). Pemeriksaan sampel dilakukan pada satu waktu (2020) untuk mengurangi bias hasil akibat perbedaan waktu dan penanganan sampel. LCN2 diperiksa dengan menggunakan Human Lipocalin-2/NGAL DuoSet ELISA dari R&D systems.

Hasil Penelitian: Prevalensi SM di daerah urban dan rural berturut-turut adalah 2,8% dan 0,85%. Sementara itu prevalensi obesitas sentral total, di urban dan di rural masing-masing sebesar 15,4%; 23,1%; dan 7.3%. Kelompok urban memiliki HOMA-IR lebih tinggi (0,99 vs 0,78; $p < 0,001$) dibandingkan kelompok rural. Nilai LCN2 lebih rendah di daerah urban bila dibandingkan dengan daerah rural (161,80 ng/mL vs 246,6 ng/ml, $p < 0,001$). Tidak terdapat korelasi antara HOMA-IR dengan LCN2 ($r = -0,75$, $p = 0,110$).

Kesimpulan: Prevalensi SM pada dewasa muda lebih tinggi pada daerah urban bila dibandingkan dengan daerah rural. Prevalensi obesitas sentral lebih tinggi di urban dibandingkan dengan rural. Rerata HOMA-IR di daerah urban lebih tinggi dibandingkan rural. Rerata LCN2 lebih tinggi di rural dibandingkan urban. Tidak terdapat perbedaan nilai LCN2 pada kelompok SM dan kelompok tanpa SM. Tidak terdapat hubungan antara HOMA IR dan LCN2.

.....Background/Objective: The prevalence of metabolic syndrome not only influenced by age but also residency area. The alteration of dietary pattern due to urbanization presumed to initiate gut inflammation. Lipocalin-2 (LCN-2) is a novel marker for gut inflammation and also cardiovascular disease. This study aim to compare insulin resistance (HOMA-IR), metabolic syndrome, and LCN-2 level in late adolescent in urban and rural area. Methods Cross sectional study was done during 2018 and 2019, which included 475 colleague students (18-20 years old) in urban and rural. We measured anthropometric parameter, fasting blood glucose, fasting insulin, lipid profile and LCN2 level. After respondent interview and physical examination, blood sample kept in specific freezer (-800C). The analysis of respondent's blood sample executed in similar time (2020) to prevent result bias due to the different time of sampling management. Methods: Cross sectional study was done during 2018 and 2019, which included 475 colleague students (18-20 years old) in urban and rural. We measured anthropometric parameter, fasting blood glucose, fasting insulin, lipid profile and LCN2 level. After respondent interview and physical examination, blood sample

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Results: The prevalence of metabolic syndrome in urban dan rural were 2.9% and 0.8%. Meanwhile the prevalence of central obesity in total, urban and rural were 15,4%; 23,1%; and 7.3%. Urban group has higher HOMA-IR value than rural group (0.99 vs 0.78; $p < 0.001$). LCN2 value was lower in urban compared with rural area (161.80 ng/mL vs 246.6 ng/mL, $p < 0.001$). There was no correlation between HOMA-IR and LCN2 ($r: -0.075$. $p: 0.110$).

Conclusions: The prevalence of MS in late adolescent higher in urban compare with rural area. Central obesity prevalence was higher in urban area. HOMA-IR were differed significantly in urban compared with rural in total population and male population. LCN2 value was differed significantly between urban and rural. However, LCN2 was not significantly differed between MS and without MS Group. Furthermore LCN2 and HOMA-IR shows no correlation