Perbedaan Kadar Adiponektin, Asimetrik Dimetilarginin Plasma, dan Respons Vasodilatasi Arteri Brakialis antara Dewasa Muda dengan Riwayat Bayi Berat Lahir Rendah dan Normal

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Abstrak

Adiponektin mempunyai efek antiaterogenik, antiinflamasi, *sensitizer insulin,* dan berperan penting dalam mengatur pertumbuhan janin. Hipoadiponektinemia dapat menyebabkan disfungsi endotel. Risiko penyakit kardiovaskular meningkat pada subjek dengan riwayat bayi berat lahir rendah (BBLR). Penelitian ini bertujuan menganalisis perbedaan kadar adiponektin, asimetrik dimetilarginin (ADMA) plasma dan respons vasodilatasi arteri brakialis melalui tes *flow mediated brachial artery* (FMBA) antara dewasa muda dengan riwayat BBLR dan bayi berat lahir normal (BBLN), serta korelasi kadar adiponektin dengan fungsi endotel pada BBLR. Penelitian kohor retrospektif dilakukan periode November 2009–Januari 2010 berasal dari *Growth Study Cohort* Tanjungsari Kabupaten Sumedang. Sebanyak 134 subjek dipilih secara *simple random*, terdiri atas 67 BBLR dan 67 BBLN yang karakteristik umumnya sama. Analisis multivariat melalui *Hotelling's trace* menunjukkan FMBA, kadar ADMA, dan adiponektin berbeda bermakna (p<0,001) antara BBLR dan BBLN. Analisis *simultaneous confidence interval* menunjukkan kadar adiponektin plasma dan FMBA bermakna lebih rendah (p=0,015 dan p<0,001) pada BBLR dibandingkan dengan BBLN. Korelasi tidak bermakna antara kadar adiponektin dan ADMA (r=-0,16; p=0,176) dan FMBA (r=0,13; p=0,281) BBLR. Kecil peran adiponektin pada disfungsi endotel, mungkin variabel lain berperan, seperti *tumor necrosis factor α*. Simpulan, terdapat perbedaan kadar adiponektin plasma dan FMBA antara dewasa muda dengan riwayat BBLR dan BBLN, tetapi kecil peran adiponektin pada disfungsi endotel dewasa muda dengan riwayat BBLR. [**MKB.** 2012;44(1):1–6].

Kata kunci: Adiponektin, asimetrik dimetilarginin, BBLR, tes *flow mediated brachial artery*

Differences of Plasma Adiponectine, Asymmetric Dimethylarginine and Brachial Artery Vasodilatation Response in Young Adult with Low and Normal Birth Weight History

Abstract

Beside an anti-atherosclerotic, anti-inflammation effect, and a sensitizer insulin, adiponectin also play an important role in fetal growth. Hypoadiponectinemia may lead to endothelial dysfunction. Low birth weight (LBW) has increase risk of cardiovascular disease. The aim of this study was to analyze the differences of plasma adiponectin, asymmetric dimethylarginine (ADMA) level and vasodilatation response of brachial artery by doing flow mediated brachial artery (FMBA) test between young adults with LBW and normal birth weight (NBW), and the role of adiponectin level in endothelial function of the LBW. This was a retrospective cohort study during November 2009–January 2010, 134 subjects were randomly selected from the Growth Study Cohort of Tanjungsari Sumedang. They consisted of 67 LBW and 67 NBW young adults, with similar basic characteristics. A multivariate analysis via Hotelling's trace showed that there was a significant difference (p<0.001) for FMBA, ADMA, and adiponectin level, but simultaneous confidence interval measurements indicated that the rate of FMBA and the level of plasma adiponectin were significantly lower (p<0.001, p=0.015, respectively) in LBW compared to NBW. The correlation between adiponectin and ADMA level (r=-0.16, p=0.176), and FMBA (r=0.13, p=0.281) in LBW were not significant, suggesting a small role of plasma adiponectin in endothelial dysfunction of young adults with LBW, other variables could play a role such as *tumor necrosis factor α*. In conclusions, the level of plasma adiponectin and FMBA are different between LBW and NBW, but the role of adiponectin may be small in endothelial dysfunction in young adults with LBW. [**MKB.** 2012;44(1):1–6].

Key words: Adiponectin, asymmetric dimethylarginine, flow mediated brachial artery, LBW test

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