

Pengaruh senam aerobik low impact pada perempuan obes abdominal dengan polimorfisme gen uncoupling protein-1: kajian pada parameter kardiometabolik dan penanda inflamasi = Effect of low impact aerobic exercise in women abdominal obes with the polymorphism of uncoupling protein 1 gene study on cardiometabolic parameters and inflammatory markers

Diniwati Mukhtar, author

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Abstrak

**ABSTRAK**

Overweight dan obesitas adalah akumulasi lemak yang berlebihan yang dapat mengganggu kesehatan. Obesitas merupakan salah satu risiko untuk terjadinya gangguan kardiometabolik. Adanya polimorfisme gen UCP1, menyebabkan bervariasinya respons terhadap olahraga teratur SALI. Penelitian ini bertujuan menganalisis pengaruh senam aerobik low impact SALI pada perempuan obes abdominal yang memiliki polimorfisme gen UCP1 terhadap parameter kardiometabolik lingkaran pinggang LP, kadar trigliserida TG dan penanda inflamasi Monocyte Chemoattractant Protein-1 MCP1. Desain penelitian adalah non randomized controlled trial. Intervensi 12 minggu terhadap 55 orang wanita obes abdominal, terdiri dari 32 orang kelompok intervensi SALI dan 23 orang kelompok kontrol. Sebelum dan sesudah program dilakukan pemeriksaan parameter kardiometabolik LP, kadar TG dan MCP1. Pemeriksaan polimorfisme -3826 A>G gen UCP1 menggunakan teknik PCR diikuti teknik RFLP. Ditemukan frekuensi genotip AA 21 orang 38,2, genotip AG 27 49,1 dan genotip GG 7 12,7, dengan frekuensi alel G 0,40. Subjek dengan kadar TG  $\geq$  130 mg/dL kelompok SALI 100 responders, Kontrol 55, dan kelompok kadar TG  $<$  130 mg/dL, 22. Subjek genotip GG polimorfisme gen UCP1 dengan kadar TG  $\geq$  130 mg/dL high responders. genotip AA low responders. Temuan ini diperkirakan terkait jumlah langkah per hari kelompok genotip GG dengan TG  $\geq$  130 mg/dL lebih tinggi dibandingkan kelompok nonresponders.

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**ABSTRACT**

Overweight and obesity were the accumulation of excessive fat that could harm health. Obesity was a risk for cardiometabolic disorders. The polymorphism of UCP1 gene, caused variations in response to regular exercise. This study aims to investigate the influence of low impact aerobics exercise LIAE in abdominal obes women who had the polymorphism of UCP1 gene on cardiometabolic parameters, waist circumference WC, levels of triglyceride TG and inflammatory markers Monocyte Chemoattractant Protein 1 MCP1. The study design was non randomized controlled trial. A total of 55 women subjects moderately obes women were divided into two groups on the basis of location. Thirty two subjects of LIAE group and 23 a non LIAE control group. Subjects were not restricted in foods consumed. The study period was 12 weeks. Outcome assessments for analyses were completed at baseline and 12 weeks for cardiometabolic parameters WC, TG and MCP1. Examination of the polymorphism 3826 A G UCP1 gene using PCR technique followed by RFLP technique. The frequencies of three genotypes of 3826 A G polymorphism of UCP1 gene were AA, AG, and GG were of 21 38.2, 27 49.1 and 7 12.7 respectively with the G allele frequency of 0.40. Post study obtained the subjects with TG baseline TG  $\geq$  130 mg dL 100 LIAE responders group, Control 55,

while TG