

Effect of metformin on handgrip strength, gait speed, myostatin serum level, and health-related quality of life: a double blind randomized controlled trial among non-diabetic pre-frail elderly patients

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20472044&lokasi=lokal>

Abstrak

Background: sarcopenia contributes to the development of frailty syndrome. Frailty syndrome is potentially improved by modifying insulin resistance, inflammation, and myostatin level. This study is aimed to investigate the effect of metformin on handgrip strength, gait speed, myostatin serum level, and health related quality of life (HR-QoL) among non diabetic pre frail elderly patients.

Methods: a double blind randomized controlled trial study was conducted on non-diabetic elderly outpatients aged >60 years with pre frail status based on phenotype and/ or index criteria (Cardiovascular Health Study and/ or Frailty Index 40 items) consecutively recruited from March 2015 to June 2016 at Cipto Mangunkusumo Hospital. One hundred twenty subjects who met the research criteria were randomized and equally assigned into 3 x 500 mg metformin or placebo group. The study outcomes were measured at baseline and after 16 weeks of intervention.

Results: out of 120 subjects, 43 subjects in metformin group and 48 subjects in placebo group who completed the intervention. There was a significant improvement on the mean gait speed of metformin group by 0.39 (0.77) second or 0.13 (0.24) meter/second that remained significant after adjusting for important prognostic factors ($p = 0.024$). There was no significant difference on handgrip strength, myostatin serum level, and HR QoL between both groups.

Conclusion: 3 x 500 mg metformin for 16 weeks was statistically significant and clinically important in improving usual gait speed as one of the HR QoL dimensions, but did not significantly improve the EQ 5D index score, handgrip strength, nor myostatin serum level.