

**PENGARUH FINERENONE TERHADAP TURNOVER *CARDIAC OUTPUT* DAN  
KAPASITAS LATIHAN PADA PASIEN INFARK MIOKARD AKUT ELEVASI  
SEGMENT ST ANTERIOR  
PASCA INTERVENSI KORONER PERKUTAN PRIMER**

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**ABSTRAK**

**Latar belakang.** Remodeling jantung akibat proses fibrosis pasca infark miokard akut anterior dapat terjadi bahkan setelah dilakukan intervensi koroner. Remodeling ini berujung dapat menurunkan cardiac output dan kapasitas latihan sehingga meningkatkan risiko kejadian kardiovaskular mayor. Finerenone, antagonis reseptor mineralokortikoid non-steroid, memiliki efek anti-inflamasi dan antifibrotik yang berpotensi menghambat proses remodeling. Penelitian ini mengkaji pengaruh pemberian Finerenone terhadap *cardiac output* (CO) dan kapasitas latihan pasien IMA-EST anterior yang menjalani intervensi koroner perkutan primer (IKPP).

**Metode.** Penelitian ini merupakan uji klinis *double-blind randomized controlled trial* melibatkan pasien IMA-EST Anterior dengan fraksi ejeksi ventrikel kiri > 40% yang berhasil menjalani IKPP, diberikan Finerenone 10 mg (n= 27) atau plasebo (n= 25) selama 60 hari sebagai tambahan medikamentosa standar. Pengukuran *cardiac output* dilakukan dengan ekokardiografi saat *pre-discharge* dan setelah 60 hari terapi; kapasitas latihan diukur dengan *cardiopulmonary exercise testing* (CPET) dengan *treadmill*.

**Hasil.** Karakteristik klinis dasar pada kedua kelompok tidak terdapat perbedaan yang signifikan. Setelah 60 hari, nilai CO meningkat pada kelompok Finerenone menjadi  $4,16 \pm 0,88$  L/menit namun perbedaan post-perlakuan antar kelompok tidak signifikan ( $p = 0,753$ ). Perubahan rata-rata  $\Delta CO$  (pre→post) cenderung lebih besar pada Finerenone ( $+0,32 \pm 1,03$  vs  $-0,07 \pm 1,17$ ;  $p = 0,203$ ) namun tidak signifikan. Kapasitas latihan menunjukkan nilai yang lebih tinggi pada kelompok Finerenone namun tidak bermakna secara statistik (peak  $VO_2$   $23,6 \pm 3,8$  vs  $21,6 \pm 3,9$  mL·kg<sup>-1</sup>·min<sup>-1</sup>;  $p = 0,084$ ; oxygen pulse  $12,5 \pm 2,3$  vs  $11,6 \pm 2,7$ ;  $p = 0,216$ ; METs  $6,66 \pm 1,24$  vs  $6,17 \pm 1,10$ ;  $p = 0,139$ ) Tidak didapatkan efek samping yang bermakna terkait pemberian Finerenone 10 mg pada penelitian ini.

**Kesimpulan.** Pemberian Finerenone tidak memberikan perbedaan yang signifikan pada *cardiac output* dan kapasitas latihan pasien IMA-EST Anterior pasca IKPP

**Kata kunci.** *Finerenone, kapasitas latihan, CPET, IMA-EST Anterior, pasca ppci sirkardian, beban KVP.*

# EFFECT OF FINERENONE ON CARDIAC OUTPUT TURNOVER AND EXERCISE CAPACITY IN PATIENTS WITH ANTERIOR ST-ELEVATION MYOCARDIAL INFARCTION AFTER PRIMARY PERCUTANEOUS CORONARY INTERVENTION

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## ABSTRACT

**Background.** Cardiac remodeling due to post-infarction fibrosis can occur even after successful coronary reperfusion, particularly in anterior ST-elevation myocardial infarction (STEMI). This remodeling process may lead to a decline in cardiac output and exercise capacity, thereby increasing the risk of major adverse cardiovascular events. Finerenone, a non-steroidal mineralocorticoid receptor antagonist, exerts anti-inflammatory and antifibrotic effects that may attenuate post-infarction remodeling. This study aimed to evaluate the effect of Finerenone on cardiac output (CO) and exercise capacity in patients with anterior STEMI who underwent primary percutaneous coronary intervention (PCI).

**Methods.** This was a double-blind randomized controlled clinical trial involving patients with anterior STEMI and a left ventricular ejection fraction >40% who successfully underwent primary PCI. Participants received either Finerenone 10 mg daily (n = 27) or placebo (n = 25) for 60 days, in addition to standard medical therapy. Cardiac output was measured using echocardiography at predischARGE and after 60 days of treatment. Exercise capacity was assessed by cardiopulmonary exercise testing (CPET) using a treadmill protocol.

**Results.** Baseline clinical characteristics were comparable between the two groups. After 60 days, cardiac output increased to  $4.16 \pm 0.88$  L/min in the Finerenone group compared with control group (no significant difference between groups ( $p = 0.753$ )). The mean change in CO ( $\Delta$  pre→post) was greater in the Finerenone group ( $+0.32 \pm 1.03$  vs  $-0.07 \pm 1.17$ ;  $p = 0.203$ ), though not statistically significant. Exercise capacity parameters were also higher in the Finerenone group but did not reach statistical significance (peak  $\text{VO}_2$   $23.6 \pm 3.8$  vs  $21.6 \pm 3.9$  mL·kg<sup>-1</sup>·min<sup>-1</sup>,  $p = 0.084$ ; oxygen pulse  $12.5 \pm 2.3$  vs  $11.6 \pm 2.7$  mL/beat,  $p = 0.216$ ; METs  $6.66 \pm 1.24$  vs  $6.17 \pm 1.10$ ,  $p = 0.139$ ). No clinically relevant adverse events related to Finerenone 10 mg were observed during the study.

**Conclusion.** Administration of Finerenone 10 mg for 60 days did not result in significant differences in cardiac output or exercise capacity compared with placebo in patients with anterior STEMI following primary PCI.

**Keywords:** *Finerenone, exercise capacity, CPET, anterior STEMI, post-PPCI.*