Indonesian Journal of Cardiology
Indonesian J Cardiol 2021:42:suppl_A
pISSN: 0126-3773 / eISSN: 2620-4762
doi: 10.30701/ijc.1180

Abstracts: Review Articles

The 5th InaPRe Vent 2021
Indonesian Cardiovascular Prevention and Rehabilitation event
The Digital Experience
in Conjunction with The 1st InTension Summit
Indonesian Heart Hypertension

Indonesian Journal of Cardiology
Indonesian J Cardiol 2021:42:suppl_A
pISSN: 0126-3773 / eISSN: 2620-4762
doi: 10.30701/ijc.1180

Efficacy of External Counterpulsation in Patients with Chronic Stable Angina Pectoris on Maximal and Sub-maximal Functional Capacity: A Systematic Review and Meta-Analysis

N.F. Tarsidin[1], B.B. Tiksnadi[1], M.R. Akbar[1]
[1]*Department of Cardiology and Vascular Medicine, Dr. Hasan Sadikin General Hospital, Universitas Padjadjaran*

Background: External counter pulsation (ECP) is a non-invasive therapy that has been considered for symptoms relief in patients with chronic debilitating angina. We aimed to evaluate ECP efficacy magnitude on maximal and sub-maximal functional capacity through systematic review and meta-analysis.
Methods: A systematic literature search of studies from MEDLINE database between 1990 to May 2021 was performed. Studies were included for meta-analysis if they were reported adequate data on maximal and sub-maximal Functional capacity test data at baseline and after ECP in chronic stable angina pectoris patients. The ECP treatment consisted of 35 outpatient sessions-1 hour/day, 5 days/week, for 7 weeks. The efficacy of ECP on maximal functional capacity calculated using standardized mean difference (SMD) to address protocol variety used in the test. Nonetheless, the efficacy of ECP on sub-maximal functional capacity was assessed using mean difference (MD). Publication bias was assessed through visual inspection of the funnel plot
Result: There were 25 studies consisted of 19 studies (n=581) assessed maximal and 6 studies (n=3027) assessed sub-maximal functional capacity were enrolled in meta-analysis. ECP therapy has significant effect to improved maximal functional capacity (SMD 1.02, 95%CI 0.64 to 1.41, $p<0.00001$, $I^2=89\%$) and improved sub-maximal functional capacity by 63 meters (MD 62.82, 95%CI 32.90 to 92.73, $p<0.0001$, $I^2=83\%$). There was no evidence of significant publication bias in studies assessed maximal functional capacity.
Conclusion: ECP therapy provides a significant improvement in maximal and sub-maximal functional capacity. Therefore, these findings broaden ECP therapy efficacy magnitude in managing chronic stable angina pectoris patients.

Keywords: External counterpulsation, functional capacity, chronic angina.

Indonesian Journal of Cardiology
Indonesian J Cardiol 2021:42:suppl_A
pISSN: 0126-3773 / eISSN: 2620-4762
doi: 10.30701/ijc.1180

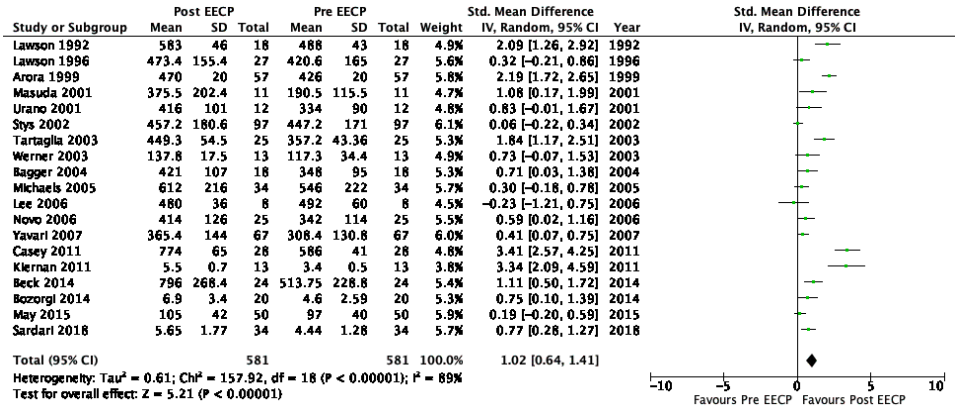

Figure 1. Forest plot of meta-analysis the effect of ECP therapy on Maximal Functional Capacity

The 5th InaPREVent 2021
Indonesian Cardiovascular Prevention and Rehabilitation event
The Digital Experience
in Conjunction with The 1st InTension Summit
Indonesian Heart Hypertension

Indonesian Journal of Cardiology
Indonesian J Cardiol 2021:42:suppl_A
pISSN: 0126-3773 / eISSN: 2620-4762
doi: 10.30701/ijc.1180

Left Ventricular Improvement in Heart Failure with Reduced Ejection Fraction After Angiotensin Receptor – Neprilysin Inhibitor Administration: A Meta-Analysis

H.B.P. Putra[1], P. Yustianti[1], Q.M. Savitri[2], F. Hartono[3], L.U. Wibisono[3], T.B. Gunarto[3]

[1] *General Practitioner in Emergency Department, dr. Ramelan Navy Hospital, Surabaya, Indonesia*
[2] *General Practitioner in Emergency Department, West Nusa Tenggara Eye Hospital, Mataram, Indonesia*
[3] *Cardiologist in Cardiology Department, dr. Ramelan Navy Hospital, Surabaya, Indonesia.*

Background: Heart failure (HF) is an end-stage of all cardiovascular disease. Heart failure with reduced ejection fraction (HFrEF) is associated with the progressive reduction of left ventricular (LV) function and an increased risk of mortality. A previous study showed that Angiotensin Receptor - Neprilysin Inhibitor (ARNI) significantly reduced the risk of death compared to enalapril. However, LV function improvement after ARNI administration remains less studied.
Method: We performed a systematic literature search from several electronic databases. The inclusion criteria were a Randomized Control Trial (RCT) or observational study which reported echocardiography follow up after ARNI administration. The primary endpoint was LVEF. Secondary endpoints were LVEDD, LVEDV, LVESD, LVESV, and LAVI. All outcomes were reported as mean difference (MD) with 95% confidence intervals (CIs).
Results: A total of 1 RCT and 17 observational study were selected, with 2.953 patients were pooled in our analysis. After ARNI administration LVEF was significantly increase (MD=7.17 [95% CI, 5.53,8.80],p<0.00001). LVEDD was decreased (MD=-2.18 [95% CI, -2.50,-1.85],p<0.00001). LVEDV was decreased (MD=-16.40 [95% CI, -24.96,-7.84], p=0.0002). LVESD was decreased (MD=-4.33 [95% CI, -5.58,-3.09], p<0.00001). LVESV was decreased (MD=-21.34 [95% CI, -34.00,-8.68],p=0.001). LAVI was decreased (MD=-5.12 [95% CI, -9.63,-0.60],p=0.03).
Conclusions: ARNI is not only preventing further cardiac remodeling in HFrEF but also reverses LV function. ARNI may be useful in cardiac rehabilitation.

Keywords: Sacubitril/Valsartan, ARNI, Heart Failure, Remodeling

Indonesian Journal of Cardiology
Indonesian J Cardiol 2021:42:suppl_A
pISSN: 0126-3773 / eISSN: 2620-4762
doi: 10.30701/ijc.1180

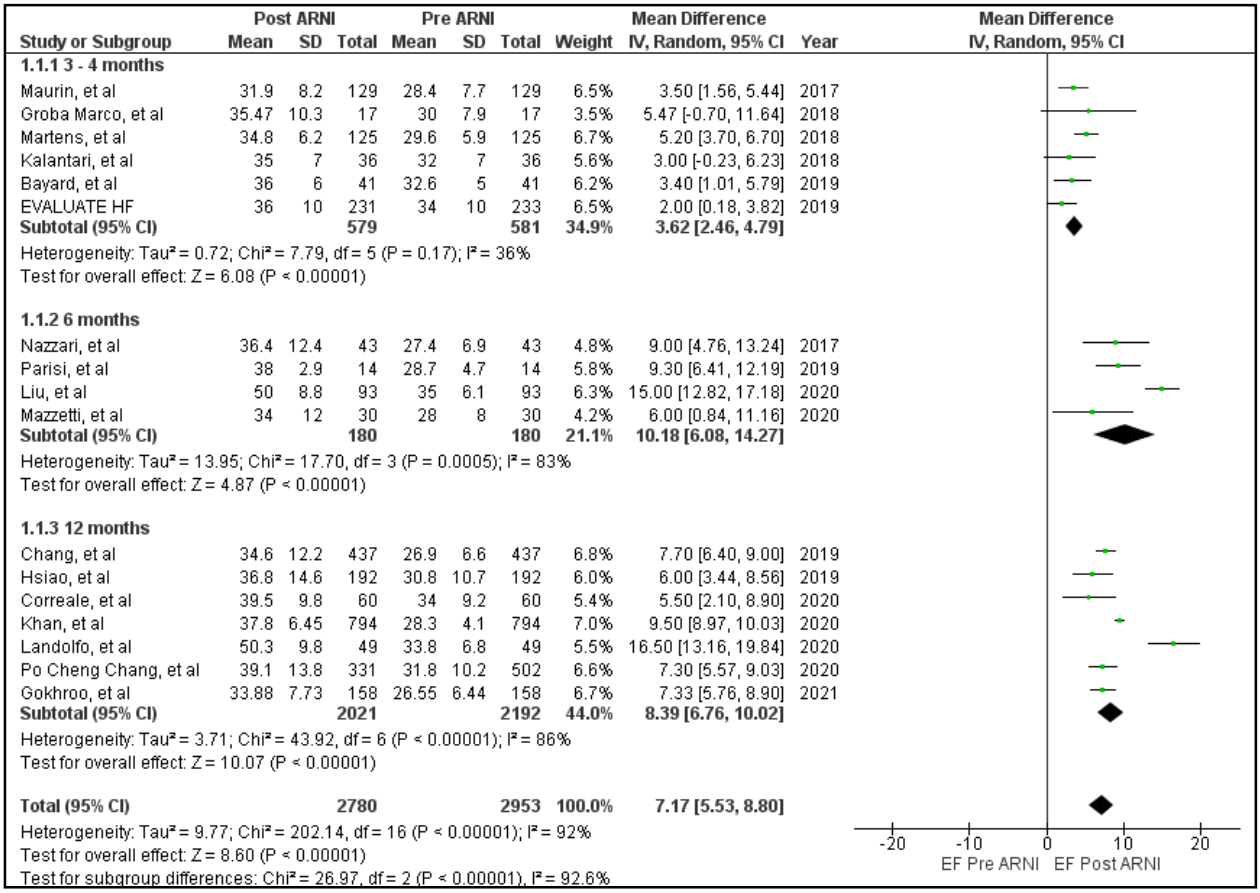

Figure 1. Forest plot of meta-analysis LVEF improvement between Pre and Post ARNI