

# Efek penyekat enzim konversi angiotensin dosis kecil terhadap six minute walk test dan kadar NT-proBNP pada pasien stenosis mitral tanpa hipotensi = Effect of low dose ace inhibitor towards six minute walk test and NT-proBNP in mitral stenosis patients without hypotension

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## Abstrak

Latar Belakang : Stenosis mitral (SM) merupakan suatu lesi obstruksi katup mitral yang memerlukan terapi definitif suatu tindakan mekanik. Di Indonesia, prevalensinya masih cukup tinggi dengan penyebab yang multifaktorial; di antaranya waktu tunggu untuk antrian dari penjadwalan intervensi di era Jaminan Kesehatan Nasional. Kondisi pasien yang hadir terlambat dan waktu tunggu yang lama dapat memperburuk keadaan pasien. Pada SM, serangkaian neurohormonal teraktivasi. Penyekat enzim konversi angiotensin (EKA) dapat menghambat aktivasi renin-angiotensi-aldosteron (RAA), memperbaiki kondisi pasien selama menunggu jadwal operasi. Namun, pemberian penyekat EKA masih kontroversial.

Tujuan : Untuk menilai keamanan dan pengaruh pemberian penyekat EKA dosis kecil pada pasien SM tanpa hipotensi terhadap six minute walk test (6MWT) dan N-Terminal pro B type natriuretic peptide (NT-proBNP).

Metode : Penelitian ini merupakan studi eksperimental acak yang tersamar ganda. Sampel diambil secara konsekutif dan dilakukan randomisasi blok, untuk pemberian lisinopril 2,5 mg atau plasebo. Setiap subyek dilakukan ekokardiografi, 6MWT dan pemeriksaan laboratorium sebelum diberikan perlakuan. Evaluasi serupa dilakukan pada setiap subyek setelah 4 minggu.

Hasil Penelitian : Terdapat 37 subyek yang berhasil dilakukan analisis; 19 pasien pada kelompok perlakuan dan 18 pasien pada kelompok kontrol. Tidak didapatkan perbedaan yang bermakna pada perubahan NT-proBNP dan 6MWT pada kedua kelompok ( NT proBNP 59 (-6747) - 2145) vs (-166) (-1495 - 1664) pg/mL;  $p = 0.443$ ) dan ( 6 MWT 11.66 + 73 vs 21.37 + 47;  $p = 0.638$ ). Tidak didapatkan pula perbedaan tekanan darah serta isi sekuncup yang bermakna antara kedua kelompok paska perlakuan, median isi sekuncup pada kelompok perlakuan 54 (34 - 74) vs 45 (34 - 94),  $p = 0.126$ .

Kesimpulan : Pemberian penyekat EKA dosis kecil pada pasien SM tanpa keadaan hipotensi aman, namun tidak meningkatkan pencapaian 6MWT dan tidak meurunkan kadar NT-proBNP.

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Background : Mitral stenosis (MS) is an obstructive lesion in which the definitive therapy is mechanical intervention. The prevalence of MS in developed countries has been decreasing due to the development of mechanical intervention. In Indonesia the prevalence remains high especially in the era of national health coverage, there are too many patients queuing for mitral valve operation. By this situation, we want to know if the angiotensin converting enzyme (ACE) inhibitor could reduce the burden of symptoms and other neurohormonal activation such as NT-proBNP in MS patients. There are many controversies to the use of ace inhibitor in MS patients, questioning the benefit and safety of ace inhibitor to these patients.

Objective : To study the safety and efficacy of low dose ACE inhibitor towards six minute walk test (6MWT) and N-Terminal pro B type natriuretic peptide (NT-proBNP) in Mitral Stenosis Patients without

Hypotension.

Methods : This study is a double blind randomized control trial. Sample was taken consecutively, and randomized to be given lisinopril 2.5mg or placebo. Every patient was assigned for echocardiography evaluation, 6MWT, and laboratory examination before and after intervention.

Result : 37 patients were included in the analysis; 19 was in the intervention group, 18 patient was in the placebo group. No significant difference were found between the two groups in terms of NT-proBNP and 6MWT, ( NT proBNP 59 (-6747) - 2145) vs (166) (-1495 - 1664) pg/mL;  $p=0.443$ ) dan ( 6 MWT 11.66 + 73 vs 21.37 + 47;  $p = 0.638$ ). In terms of blood pressure and stroke volume, there was also no significant difference between the two groups after intervention, median for stroke volume in intervention group and control group were 54 (34 - 74) vs 45 (34 - 94),  $p = 0.126$ .

Conclusion : Low dose ACE inhibitor is safe to be given in MS patient without hypotension, however, it did not increase functional capacity measured by 6MWT, neither improve NT-proBNP.