

INTISARI

PENGARUH PENAMBAHAN PROGRAM LATIHAN FISIK TERHADAP KAPASITAS FUNGSIONAL PENDERITA HIPERTENSI ARTERI PULMONAL AKIBAT DEFEK SEPTUM ATRIUM SEKUNDUM

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Latar Belakang: Defek septum atrium (DSA) sering tidak terdiagnosis selama masa anak-anak di Indonesia kemudian berkembang menjadi hipertensi arteri pulmonal (HAP). Penderita akan mengalami keterbatasan kapasitasas fungsional. Terapi target HAP di Indonesia terbatas. Program latihan fisik diharapkan menjadi terapi tambahan HAP yang menjanjikan.

Tujuan: Penelitian ini adalah uji klinis randomisaasi untuk mengevaluasi pengaruh program latihan fisik terhadap kapasitas fungsional pada pasien HAP akibat DSA sekundum.

Metode: Tiga puluh delapan pasien dewasa DSA-HAP stabil yang mendapatkan terapi target HAP secara acak dibagi dalam kelompok kontrol ($n = 18$) dan kelompok perlakuan ($n = 20$). Tidak terdapat perubahan terapi standar HAP selama periode penelitian. Kelompok perlakuan mendapatkan program latihan selama 4 minggu (latihan aerobik 3 kali / minggu di rumah dan berjalan di atas *treadmill* setiap 2 minggu di rumah sakit). Kelompok kontrol tidak mendapatkan program tersebut. *Endpoint* adalah perubahan 6 *minutes walk distance* (6MWD) pada minggu ke-4 sebagai penanda peningkatan kapasitas fungsional.

Hasil: Karakteristik dasar kedua kelompok tidak berbeda secara signifikan. Terdapat peningkatan 6MWD pada kelompok perlakuan, sedangkan 6MWD menurun pada kelompok kontrol ($44,80 \pm 26,55\text{m}$ vs $-27,39 \pm 30,96\text{m}$, $p = 0,000$ vs $0,002$). Analisis komparatif antara program latihan fisik dan 6MWD antara kedua kelompok menggunakan *Independent T-Test* didapatkan perbedaan signifikan antara kedua kelompok ($p = 0,000$; CI95% $-91,11 - -53,27$). Pada analisis multivariat, program latihan fisik merupakan variabel independen dalam peningkatan kapasitas fungsional ($p = 0,000$).

Simpulan: Program latihan fisik meningkatkan kapasitas fungsional pada pasien DSA-HAP. Penelitian ini menunjukkan bahwa program latihan fisik dapat digunakan sebagai terapi tambahan pada terapi standar HAP.

Kata Kunci: Defek Septum Atrium; Hipertensi Arteri Pulmonal; Program Latihan Fisik; Kapasitas Fungsional; 6MWD

**THE EFFECT OF ADDING PHYSICAL EXERCISE PROGRAMS ON
FUNCTIONAL CAPACITY OF PULMONARY ARTERIAL
HYPERTENSION ASSOCIATED SECUNDUM ATRIUM SEPTAL
DEFECT DEFECT PATIENTS**

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Background: Atrial septal defect (ASD) often undiagnosed during childhood in Indonesia then develop into pulmonary arterial hypertension (PAH). Patients will develop functional capacity limitations. PAH-targeted-therapy in Indonesia is limited. The physical exercise program is expected to be a promising adjunct therapy for PAH.

Objective: This study is a randomized clinical trial to evaluate the effect of a physical exercise program on functional capacity in PAH associated DSA (PAH-DSA).

Methods: Thirty-eight stable PAH-DSA adult patients receiving the PAH-targeted-therapies were randomly divided into control groups (n = 18) and treatment groups (n = 20). There were no changes in PAH-targeted-therapies during the study period. The treatment group received an exercise program for 4 weeks (aerobic exercise 3 times/week at home and walking on a treadmill every 2 weeks in the hospital). The control group did not get the program. The endpoint is a change of 6-minutes walking distance (6MWD) in the 4th week as a marker of increasing functional capacity.

Results: The basic characteristics of the two groups did not differ significantly. There was an increase of 6MWD in the treatment group, whereas 6MWD decreased in the control group ($44.80 \pm 26.55\text{m}$ vs $-27.39 \pm 30.96\text{m}$, $p = 0.000$ vs 0.002). Comparative analysis between exercise program and 6MWD between the two groups using the Independent T-Test found a significant difference between the two groups ($p = 0,000$; CI95% $-91.11 - -53.27$). In multivariate analysis, the exercise program is an independent variable in increasing functional capacity ($p = 0,000$).

Conclusion: The exercise program increases functional capacity in PAH-ASD patients. This study shows that an exercise program can be used as adjunctive therapy for PAH-targeted-therapies.

Keywords: Pulmonary Arterial Hypertension; Functional Capacity; Exercise Program