

Fizioterapijske intervencije u ambulantnoj kardiovaskularnoj rehabilitaciji kod bolesnika s operiranom aortnom valvulom

Physiotherapy intervention in outpatient cardiovascular rehabilitation in patients after aortic valve surgery

Jadranka Dražić-Balov¹,
 Žaklina Muminović¹,
 Gabrijela Ćurić¹,
 Kristina Narančić Skorić¹,
 Mario Ivanuša^{*1,2}

¹Poliklinika za prevenciju kardiovaskularnih bolesti i rehabilitaciju, Zagreb, Hrvatska

²Medicinski fakultet Sveučilišta u Rijeci, Rijeka, Hrvatska

¹Institute for Cardiovascular Prevention and Rehabilitation, Zagreb, Croatia

²University of Rijeka School of Medicine, Rijeka, Croatia

KLJUČNE RIJEČI: operacija aortne valvule, fizioterapijska intervencija, ambulantna kardiovaskularna rehabilitacija.

KEYWORDS: aortic valve cardiac surgery, physiotherapy intervention, outpatient cardiovascular rehabilitation.

CITATION: *Cardiol Croat.* 2016;11(12):630-631. | DOI: <http://dx.doi.org/10.15836/ccar2016.630>

***ADDRESS FOR CORRESPONDENCE:** Mario Ivanuša, Poliklinika za prevenciju kardiovaskularnih bolesti i rehabilitaciju, Draškovićeva 13, HR-10000 Zagreb, Croatia. / Phone: +385-1-4612-290; Fax: +385-1-4612-343 / E-mail: mivanusa@gmail.com

ORCID: Jadranka Dražić-Balov, <http://orcid.org/0000-0001-8804-1357> · Žaklina Muminović, <http://orcid.org/0000-0001-6037-7537> · Gabrijela Ćurić, <http://orcid.org/0000-0002-4718-1019> · Kristina Narančić Skorić, <http://orcid.org/0000-0002-3888-4804> · Mario Ivanuša, <http://orcid.org/0000-0002-6426-6831>

Uvod: Neposredno po učinjenom operativnom zahvatu implantacije aortne valvule započinje prva faza kardiovaskularne rehabilitacije (KVR). Rehabilitacija se nastavlja nakon kontrolnog pregleda kardiokirurga, koji je uobičajen 6 do 8 tjedana poslije zahvata, a ukoliko nema kontraindikacija, uključanjem u neki od programa bolničke ili ambulantne KVR¹. Cilj rada je prikaz rezultata fizioterapijskih (FT) intervencija kod bolesnika s operiranom aortnom valvulom uključenih u program ambulantne KVR u Poliklinici za prevenciju kardiovaskularnih bolesti i rehabilitaciju u Zagrebu.

Pacijenti i metode: Retrospektivno smo analizirali podatke iz povijesti bolesti svih bolesnika s operiranom aortnom valvulom uključenih u program ambulantne KVR u Poliklinici u razdoblju od 10. 1. 2012. koji su završili sudjelovanje do 6. 10. 2016. godine. Provođenje ambulantne KVR u Poliklinici² i prikaz FT intervencija^{2,3} već su opisani. Vremensko razdoblje od operativnog zahvata do uključanja u program, prisutnost tegoba tijekom provođenja treninga i učestalost sudjelovanja na treningu utječu na ostvarivanje kratkoročnih i dugoročnih FT ciljeva što je prikazano metodama deskriptivne statistike u skupinama ispitanika prema spolu.

Rezultati: Tijekom razdoblja istraživanja program ambulantne KVR završilo je ukupno 53 bolesnika, 35 (66%) muškaraca i 18 (34%) žena. Rezultati istraživanja uspješnosti provođenja FT intervencija prikazani su u **tablici 1**.

Zaključak: Bolesnici s operiranom aortnom valvulom u Hrvatskoj započinju program ambulantne KVR kasno, prosječno čak 5 mjeseci nakon operativnog zahvata. Manji broj tegoba rezultirao je većim brojem sudjelovanja u intervalnom kardiovaskularnom treningu kod bolesnika i stoga uspješnijim postizanjem kratkoročnih i dugoročnih FT ciljeva programa ambulantne KVR. Obzirom da se radi o istraživanju u jednom centru KVR potrebno je ispitati učinak u većoj skupini, kao i kod bolesnika s drugim indikacijama za ambulantnu KVR.

Introduction: The aortic valve implantation is immediately followed by the first phase of cardiovascular rehabilitation (CVR). The first follow-up by a cardiac surgeon, which is common in 6-8 weeks after the surgical intervention, is followed by the continued rehabilitation by including the patients in some of the inpatient or outpatient CVR programs, provided there are no contraindications present.¹ The aim of the paper is to present the results of physiotherapy (PT) interventions in patients after aortic valve surgery involved in the outpatient CVR program in the Institute for Cardiovascular Diseases Prevention and Rehabilitation in Zagreb.

Patients and Methods: We retrospectively analyzed the data from the medical charts of all patients after aortic valve surgery involved in the outpatient CVR program in the Polyclinic during the period from 10th January 2012 who ceased to participate in the program by 6th October 2016. The performance of the CVR in the Institute² and the presentation of PT interventions^{2,3} have already been described. The time period from the surgical intervention to involvement in the program, the presence of problems during the training and frequency of participation in the training affect the accomplishment of short-term and long-term PT goals which is shown by descriptive statistics in the groups of subjects by gender.

Results: During the period of the study, a total of 53 patients, of whom 35 (66%) men and 18 (34%) women underwent the CVR program. The study results of the success of performing PT interventions are shown in **Table 1**.

Conclusion: The patients with aortic valve operated in Croatia start with the outpatient CVR program late, on the average after 5 months following the surgical intervention. A small number of problems have resulted in a large number of participation in the interval cardiovascular training in patients and therefore more successful accomplishment of short-term and long-term PT goals of the CVR program. Since this is a study in one CVR center, it is necessary to examine the effect in a larger group, as well as in patients with other indications for outpatient CVR.

RECEIVED:
November 10, 2016

ACCEPTED:
November 20, 2016



TABLE 1. Physiotherapy interventions in patients after aortic valve surgery undergoing outpatient cardiovascular rehabilitation.

	Men (n=35)	Women (n=18)	Total (N=53)
Number of days till involvement in the program			
Average number	156	146	153
Minimum number	48	51	48
Maximum number	763	440	763
Number of participations in the interval cardiovascular training			
>35	11.4% (4/35)	16.7% (3/18)	13.2% (7/53)
24-35	34.3% (12/35)	50.0% (9/18)	39.6% (21/53)
13-23	20.0% (7/35)	16.7% (3/18)	18.9% (10/53)
<13	34.3% (12/35)	16.7% (3/18)	28.3% (15/53)
Discomforts during the program			
No discomforts	34.3% (12/35)	44.4% (8/18)	37.7% (20/53)
Cardiovascular	25.7% (9/35)	0% (0/18)	16.9% (9/53)
Noncardiovascular	28.6% (10/35)	33.3% (6/18)	30.2% (16/53)
Cardiovascular and noncardiovascular	11.4% (4/35)	22.2% (4/18)	15.1% (8/53)
Rehabilitation conditioning during the program			
Increase in stress	28.6% (10/35)	27.8% (5/18)	28.3% (15/53)
Decrease in stress	0% (0/35)	0% (0/18)	0% (0/53)
Accomplishment of physiotherapy goals			
Short-term goals accomplished	80.0% (28/35)	89.0% (16/18)	83.0% (44/53)
Long-term goals accomplished	60.0% (21/35)	83.3% (15/18)	67.9% (36/53)

LITERATURE

1. Association of Chartered Physiotherapists in Cardiac Rehabilitation. Early Activity After Cardiac Surgery 2016. Available at: http://acpicr.com/sites/default/files/Early%20Activity%20After%20Cardiac%20Surgery%202016%20-%20Booklet%20-%20A4_1.pdf (20. 10. 2016).
2. Ivanuša M, Narančić Skorić K, Glavaš Vražić S, Kruhek Leontić D, Heinrich M, Mažuran Brkljačić L, et al. Outpatient Cardiovascular Rehabilitation in Croatia. *Cardiol Croat.* 2015;10(1-2):28-42. DOI: <http://dx.doi.org/10.15836/ccar.2015.28>
3. Muminović Ž, Brkljačić Mažuran L, Dražić-Balov J, Glavaš Vražić S, Ivanuša M. I am active, therefore I am: physiotherapy interventions in cardiovascular rehabilitation. *Cardiol Croat.* 2016;11(10-11):548-549. DOI: <http://dx.doi.org/10.15836/ccar2016.548>