

9th CHALLENGES in CARDIOLOGY

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First year experience of a recent cardiac rehabilitation unit

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Introduction: Portuguese Society of Cardiology recently published a document stating standards for the implementation and development of cardiac rehabilitation (CR) programs in Portugal. One of the mentioned challenges was the need of improving the number and regional distribution of CR units, to generalize a known thoroughly advantageous intervention to all portuguese cardiac patients. We aim to divulge the work of a new CR unit, characterizing its frame and first year results.

Methods: We analysed the cohort of all patients included in a single centre CR program. Descriptive statistics was used to characterize the population and the implemented medical and educational care. Two-sided paired t-tests and test of proportions were used accordingly, to analyse data pre and post-CR program. Analysis performed with STATA 14.2 ($\alpha=0.05$).

Results: The studied CR program began in Nov/2017 and was designed to include post-acute coronary syndrome patients in a 12-week program, comprising training and educational sessions twice a week. The multidisciplinary work team includes one dedicated cardiologist, one specialist in physiatry, one physiotherapist, CR nurses, nutritionist, psychiatrist, endocrinologist, urologist, pneumologist and internal medicine doctors treating obesity and smoking cessation. Each patient is individually evaluated, pre and post-CR program, with echocardiogram, treadmill test, blood tests and through depression/anxiety (HADS-A/D), erectile dysfunction (IIEF-5) and quality of life (EuroQol) questionnaires.



Since the beginning of the program until Oct/2018, 29 patients were included, 28 of which were men and with a mean age of 55.8 ± 10.3 yo. 4 patients were referred from the external consult and the remaining directly from hospitalization episode, two thirds of which (n=17) post-STEMI. Median time from discharge to the beginning of CR program was 89 days.

Mean differences pre and post-CR program of the parameters evaluated, are presented in the table. There was a significant reduction of BMI (28.0Kg/m^2 vs 18.7kg/m^2 , $p < 0.001$), abdominal circumference (101.1cm vs 97.1cm, $p = 0.020$), total cholesterol (158.8mg/dl vs 122.1mg/dl, $p = 0.003$), c-LDL (94.4mg/dl vs 64.0mg/dl, $p = 0.002$) and TG (150.1mg/dl vs 94.5mg/dl, $p = 0.001$). We also found a statistically significant reduction in NT-proBNP level (827.9pg/ml vs 262.6pg/ml, $p = 0.016$). Exercise test duration increased significantly (difference of 2min6sec, $p < 0.001$). No significant changes were found in HADS-A/D, IIEF-5 or EuroQol questionnaires.

Conclusion: Although the number of included patients is still small, we could already find efficacy results, confirming the quality of the work done and the benefits of the program. Clear modifications of risk factors, as well as a clear improvement of prognostic variables are the drive to continue, to provide a CR program to more patients.

MEAN DIFFERENCES PRE AND POST-CR PROGRAM					
	Diff.	<i>p-value</i>		Diff.	<i>p-value</i>
Biometric Parameters			LVEF (%)	1.5	0.458
Abdominal circumference (cm)	-4.0	0.020	Questionnaires		
BMI (Kg/m ²)	-9.3	<0.001	HADS-A	-2.7	0.089
Biochemical Parameters			HADS-D	-0.9	0.325
HbA1c (%)	-0.1	0.584	IIFE-5	0.2	0.890
Total cholesterol (mg/dl)	-36.7	0.003	EuroQol	5.0	0.278
HDL-cholesterol (mg/dl)	3.2	0.057	Exercise Test		
LDL-cholesterol (mg/dl)	-30.4	0.002	Duration (min'sec'')	2'06''	<0.001
Triglycerides (mg/dl)	-55.6	0.001	METs	0.4	0.728
NT-proBNP (pg/ml)	-565.3	0.016	Double product	453.1	0.583