CONCLUSION Our data showed valuable incision time and x-ray exposure reduction and a relatively low rate of occurrence of intra-procedure total AV block, without other complications requiring the implantation of the RV lead first.

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Super-Response to Cardiac Resynchronization Therapy in Patients With Dyssynchrony Cardiomyopathy

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INTRODUCTION Left bundle-branch block (LBBB) is associated with intra and interventricular asynchrony, abnormal LV diastolic filling patterns and impairment of LV systolic function. So, there are patients with LBBB and LV systolic dysfunction without another etiology for heart failure, called "dyssynchrony cardiomyopathy". The aim of this study is to address if CRT with pacemaker (CRT-P) only is able to correct these deleterious effects of LBBB.

METHODS AND RESULTS Patients with normal LV ejection fraction (LVEF) and LBBB (QRS>120 ms) were followed serially. When LVEF evaluated by echocardiography was <40%, optimal medical treatment was started. Ischemic etiology was ruled out by coronariography. At 12 months the patients were reevaluated again. If LVEF was <36% despite adequate medical treatment, then a CRT-P implanted was performed. We implanted 32 consecutive patients with the diagnosis of "dyssynchrony cardiomyopathy". The mean follow-up was 31±11 months. LVEF and LV volumes and diameters improved in all patients at one year follow-up (table 2), with LVEF normalization in 93%.

Table 1. Baseline characteristics.

Age (years)	67±10
Males, n (%)	31 (77,5)
NYHA functional class, n(%)	
II	11(34)
III	21(66)
Medical treatment (%)	
ACEI/ARAs	100%
Diuretics	100%
Betablockers	100%
Spironolactone	93%
Sinus rhythm, n(%)	30 (93)
QRS (ms)	161,5±30,3
PR interval (ms)	189,5±50,1
Time diagnosis-implant (months)	16±4

ACEIs: angiotensin converting enzyme inhibitors; ARAs: angiotensin receptors antagonists; NYHA: New York Heart Association.

Table 2. Echocardiographic parameters at baseline and at one year follow-up after CRT-P implant.

	Basal	12 months	p
LVEF (%)	29.2±8.6	53.1±6.5	0.001
LVEDD (mm)	67±12	50±7	0.001
LVESD (mm)	55±10	36±9	0.01
LVEDV (ml)	201±77	142±45	0.01
LVESV (ml)	148±64	83±49	0.01
E/E'	18.0±2.9	10.2±4.5	0,03
Tei index	0.69±0,05	0.37±0.06	0,02
MR	2.8±1.4	1.2±1.0	0,03

EDD: end -diastolic diameter; EDV: end-diastolic volume; ESD: end-systolic diameter; ESV: end-systolic volumen; EF: Ejection fraction; LV: left ventricular; MR: mitral regurgitation.

CONCLUSIONS In patients with "dyssynchrony cardiomyopathy", LV dysfunction and heart failure, CRT-P produces an inverse LV remodelling and an important improvement in LVEF.

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Resynchronization Therapy: Response and Clinical Outcomes in Patients With Ischemic and Non-Ischemic Cardiomyopathy

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INTRODUCTION/AIM Compare baseline characteristics, CRT-response and long-term prognosis of patients with ischemic (ICMP) and non-ischemic cardiomyopathy (NICMP).

METHODS Retrospective analysis of 316 patients who underwent biventricular device placement (CRT-P or CRT-D) between January 2002 and March 2016.

RESULTS In our study, 43% of patients had ICMP and 57,3% NICMP. ICMP patients were older, more frequently male, had more chronic kidney disease (CKD) and cardiovascular risk factors. There were no significant differences between groups concerning baseline LVEF and NYHA functional class. After resynchronization, LVEF improved 5,3 ± 10,4% in ICMP and 9,5 ± 12,3% in NICMP patients (p=0,006). Changes in NYHA class were 0,7 ± 0,6 in ICMP and 0,8 ± 0,5 in NICMP groups (p= 0,1). At follow-up (47,5 ± 38,1 months), mortality rates were 39,6% and 28,3% in the ICMP and NICMP groups (p=0,037), and hospitalization occurred in 23,8% of ischemic and 14,5% of non-ischemic patients (p=0,039). After inclusion of other significant variables (age, sex, CKD, final LVEF) in multivariate analysis, etiology was not an independent predictor of mortality or of the composite end-point of mortality and heart failure hospitalization.

CONCLUSION The group of CRT patients with non-ischemic cardiomyopathy had a better echocardiographic response to resynchronization and better long term prognosis. However, after adjusting for confounding factors in multivariate analysis, etiology was not an independent predictor of prognosis.

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Exercise Stress Test Importance in CRT Patients Follow-Up

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INTRODUCTION Assessing CRT device optimization according to exercise test performance in CRT patients.

METHODS Observational retrospective study of pts with CRT devices; periodic follow-up visits at intervals of 6 months: we collected clinical and echocardiography data, device interrogation and exercise test was performed. In the event of capture loss during exercise test subsequent programming was performed individualized for each patient to maximize BiV pacing.

RESULTS Demographic data: 26 pts (16 male) aged 60.7±9.1 yo with dilated cardiomyopathy, NYHA functional class II and triple chamber CRT devices (CRT-P 21 pts, CRT-D 5 pts); sinus rhythm 96% of pts, permanent AF 4 % of pts. Follow-up period: 24.6±19.1 months. Cycloergometer exercise test was performed in all pts: loss of ventricular capture was noted in 27% of pts, individualized optimizing was done for each pt and the exercise test was repeated to ensure Biv pacing after reprogramming the device.

Cycloergometer execise test – Bruce protocol			
mean exercise load	**5.4±1.2 METS (111.1±35.6 Watts)**		
peak heart rate (HR)	**66±11.3 % of maximum age predicted HR (all pts under optimal betablocker treatment, 42% of pts with amiodarone association)**		
loss of ventricular capture (27 % of patients)	physiological shortening of atrioventricular interval (AVI)	12 % of pts	CRT device reprogramming: • short and dynamic PR interval • rate adaptive AVI • individualized MTR • threshold level and slope activity reprogrammed
	exceeding maximum tracking rate (MTR)	8 % of pts	
	loss of BiV pacing due to high ventricular response above lower later limit	7 % of pts	