

## Correlation of electrocardiographic criteria for left bundle branch block with intravenous synchrony

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**INTRODUCTION:** About 30% of patients are nonresponders to cardiac resynchronization therapy. One of the reasons proposed is that these patients do not present a true left bundle branch block (LBBB) and for that reason they do not develop dyssynchrony in the left ventricle. New electrocardiographic criteria have been published to define a true LBBB. SynchroMax is a non-invasive, simple and practical method that has been shown to have a high predictive value for detecting electrical dyssynchrony and a very good correlation with mechanical dyssynchrony.

**OBJECTIVE:** Correlate the electrocardiographic criteria of LBBB individually or grouped, with the presence of dyssynchrony.

**METHODOLOGY:** Patients with LBBB (Minnesota Code) were prospectively collected. Those with pacemakers were excluded. The following electrocardiographic criteria were analyzed individually and in association: a) QS image in V1; b) QRS duration: 120-149 ms,  $\geq 150$  ms; c) Monophasic complexes with Notching or Slurring in D1 and / or V6 (Notch / S); d) QRS axis in the frontal plane deviated to the left ( $\geq -30^\circ$ ). SynchroMax curves and values were taken from all patients and classified according to the indices as Synchronous ( $< 0.4$ ), Intermediate (0.4-0.7) or Asynchronous ( $> 0.7$ ).

**RESULTS:** Were included 46p; age 34-89 years; 27 men. Heart rhythm was sinus in 40p and atrial fibrillation in 6p. The underlying heart disease was: Ischemic: 20p, Dilated Cardiomyopathy: 4p, Valvular: 3p, Chagas: 1p, Hypertensive heart disease: 18p. The results can be seen in table 1.

**CONCLUSION:** Of the LBBB electrocardiographic criteria analyzed in this study, QRS duration  $\geq 150$  ms and left axis deviation were the best predictors of dyssynchrony individually and in association.

Table 1: Results

	QRS120/149	QRS $\geq 150$	QSV1	Notch/S	LeftAxis	QSV1+ $\geq 150$	Notch/S+ $\geq 150$	LeftAxis+ $\geq 150$
N° Patients	29	17	27	26	25	13	11	10
Synchronous	5(17%)	2(16%)	3(11%)	5(19%)	1 (4%)	2(15%)	1(9%)	0
Intermediate	6(20%)	1(8%)	4(15%)	2(7%)	2(8%)	1(8%)	1(9%)	0
Asynchronous	18(63%)	14(82%)	20(74%)	19(74%)	22(88%)	10(77%)	9(82%)	10(100%)

Abstract Figure. synchronous and asynchronous LBBB

