Left bundle branch block prognosis factors: main features associated with adverse outcome. 2010

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1) Fragmented wide QRS (f-wQRS) on a 12-lead ECG: defined by the presence of >2 notches on the R wave or the S wave and had to be present in ≥2 contiguous inferior (II, III, aVF), lateral (I, aVL, V6) or anterior (V1 to V5) leads. It is a sign of myocardial scar and poor prognosis on a standard 12-lead ECG. Additionally, is a moderately sensitive and highly specific sign for myocardial scar in patients with known or suspected coronary artery disease. f-wQRS is also an independent predictor of mortality. (1)

2) QRS axis beyond ≥ 90º on frontal plane (2)

3) The presence or new onset of left bundle branch block (LBBB) in patients with acute myocardial infarction scenario.

4) LBBB was documented at presentation in 9% of Tako-tsubo cardiomyopathy (TTC) patients. At long-term follow-up, TTC patients with LBBB showed increased unadjusted mortality. However, when adjusted for age, baseline characteristics, and concomitant diseases, LBBB did not appear to be an independent predictor of poor outcome in patients with TTC (3).

5) Elderly patients (aged 60-85 years) with chronic heart failure (NYHA class II-IV CHF) and LBBB. Patients with LBBB had statistically significant increases of end diastolic and systolic dimensions, end diastolic and systolic volumes, sphericity index, long axis, decreases of relative thickness of the left ventricle, interventricular septum, and left ventricular ejection fraction. Pronounced mitral regurgitation also was more frequent in patients with LBBB. During follow up 14/34 patients (41.2%) with LBBB and 19/74 patients (25.7%) without LBBB died. There were 10 and 9 sudden deaths among patients with and without LBBB, respectively (4).

6) In patients with stable chronic CV disease, LBBB but not RBBB is an independent predictor of heart failure, sudden death, CV death, and all-cause death.(5).

References

1) Das MK, Suradi H, Maskoun W, Michael MA, Shen C, Peng J, Dandamudi G, Mahenthiran J. Fragmented wide QRS on a 12-lead ECG: a sign of myocardial scar and poor prognosis. Circ Arrhythm Electrophysiol. 2008 Oct;1:258-268.

2) Nikolic G, Marriott HJ. Left bundle branch block with right axis deviation: a marker of congestive cardiomyopathy. J Electrocardiol. 1985 Oct; 18: 395-404.

3) Parodi G, Salvadori C, Del Pace S, Bellandi B, Carrabba N, Gensini GF, Antoniucci D; Tuscany Registry of Tako-Tsubo Cardiomyopathy. Left bundle branch block as an electrocardiographic pattern at presentation of patients with Tako-tsubo cardiomyopathy. Cardiovasc Med (Hagerstown). 2009 Jan;10(1):100-103.

4) Larina VN, Bart BIa.Structural-functional peculiarities of the heart and survival of elderly patients with chronic heart failure and left bundle branch block Kardiologiia. 2009;49(5):16-21.

5) Sumner G, Salehian O, Yi Q, et al.The prognostic significance of bundle branch block in high-risk chronic stable vascular disease patients: a report from the HOPE trial. J Cardiovasc Electrophysiol. 2009 Jul;20(7): 781-787.