Relationship between duration of QRS complex in ECG and echocardiographic ejection fraction in patients with Left bundle Branch Block

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Abstract

Background&Objective: Prolongation of QRS duration particularly in Left bundle Branch Block (LBBB) is commonly associated with many cardiac diseases. Electrocardiographic study of QRS duration and electrical axis may be predictors of sever LV systolic dysfunction.

Materials&Methods: In this prospective Study conducted in cardiac ward CCU and out- patient clinic of Sh. Beheshti hospital in Babol (1999-2001), 150 patients with diagnosis of LBBB divided to two groups (one QRS≥0.16 second and the other with QRS<0.16) second . Then relationship between QRS- duration, Left axis deviation and echocardiographic LV ejection fraction analysed.

Results: There wasn't significant correlation between ages, gender, and type of cardiac disease with ejection fraction among patients with LBBB. The mean ejection Fraction in the patients with a QRS duration≥0.16 second (n=19) was significantly lower than the mean ejection fraction in the patients with a QRS duration<0.16 second (n=131) (P<0.05) Presence of Left axis deviation associated with LBBB did not have added predictive value and was not significantly correlated with Ejection Fraction.

Conclusion: As conclusion, the QRS duration≥ 0.16 second in the presence of LBBB has a significant inverse relation with Ejection Fraction and is a simple and appropriate marker of significant left ventricular dysfunction.

Key Words: QRS Duration time- LV dysfunction- Ejection fraction- Left Bundle Branch Block- Echocardiography