

Category : **Cardiovascular: Other**

A282 - Echocardiographic technics for optimal atrio-ventricular (av) interval election in dual-chamber pacemaker

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Introduction:

Dual-chamber pacemakers allows the physician to ensure the best dyastolic function and filling time by calculating the optimal atrioventricular interval to achieve a right systolic function for improving the clinical status of the patients with AV disorders.

Methods:

Prospectively study in a two-month period (1may-30 june 2019) in which we registered all patients with acute AV block admitted in our ICU of 20 beds and with an indication of dual chamber pacemaker implantation. A routinary echocardiography was performed by our cardiac estimation unit physicians (intensivists) in the next 6 hours after the implantation (max). Two technics were applied:

- Calculating the AV by the Ritter's Method, using a short-AV interval of 50 ms and a long-AV interval of 200 ms. In all patient we assured using the mitral doppler that there was neither E-A fusion nor truncated A wave.
- Measuring the Time Velocity Integral (TVI) of the Left Ventriclular Outflow Tract (LVOT) at different AV intervals selected (100, 150, 180 and 200 ms),making the average of 3 cardiac cycles of each interval. The average time in applying both methods were noted.

Results:

31 patients with cardiac arrhythmia were admitted in the study period. 19 (61.3%) with AV disorders 14 (45.2%) with dual-chamber pacemaker implantation. Only 7 (22.6%) patients fullfill the inclusión criteria (AV block and US in next 6 hoursmaximum) and were admitted in our study. 5 male (71.4%), mean age 72±8.5 years. Average times applied: with Ritter's method, 7.5min (IC 95:5.2-9.8) and with TVI method, 9.7 min (IC95:7.5-11.9).Complete results on Figure 1.

Conclusion:

We demonstrate the high variability of AV interval amongst patients. The use of bedside echocardiography in ICU in these patients is an assumable procedure, technically and temporarily, and it may facilitate the selection of the optimal AV interval after a dual chamber pacing implantation.

Image :

PATIENT	1	2	3	4	5	6	7
AV RITTER (ms)	166	136	162	93	127	180	150
BEST TVI (cm) at interval AV (ms)	16 cm at 180 ms	27.6 cm at 150 ms	21.6 cm at 150 ms	23 cm at 100 ms	20 cm at 150 ms	19.8 cm at 180 ms	25 cm at 150 ms
AV SELECTED (ms)	180	150	160	120	150	180	150

Results