

At 3 months follow up:

The mean values of mean P-wave amplitude, atrial sensing threshold, atrial lead impedance, % of AV

synchrony and % of failure of AV synchronous pacing were as shown in the following table 4:

Table 4: Shows the mean values of mean P-wave amplitude, atrial sensing threshold, atrial lead impedance, % of AV synchrony, and %of failure of AV synchronous pacing of DDD group and VDD group at 1 month follow up.

The parameter	VDD group Mean±SD n=24	DDD group Mean±SD n=24	P value (t-test)
Mean P-wave amplitude (mV)	2.49±1.09	3.2±1.00	0.0125
Atrial sensing threshold (mV)	2.16±1.15	3.00±0.89	0.0014
Atrial Lead Impedance (Ω)	447.54±113.8	491±103.14	0.0631
%AV Synchronous pacing	87%±8%	93%±7%	0.0119
%of failure of AV synchronous pacing	13%±8%	7%±7%	0.0166

In the VDD group, the value of mean P-wave amplitude was significantly different when compared to that of the DDD group ($p<0.05$). The % o AV synchronous pacing and % of failure of AV synchronous pacing were significantly different when compared to that of DDD group ($p<0.05$), whereas there was no significant difference in the value of lead impedance when compared to the atrial lead impedance of the DDD group ($p>0.05$). On the other hand, the value of atrial sensing threshold in the VDD group showed a highly significant differences when compared to that of DDD group ($p<0.01$).

Discussion

Despite the introduction of single pass leads capable of dual sensing and ventricular pacing over 20 years ago, VDD pacing remains underutilized pacing approach in patient with AV block⁽⁵⁻⁷⁾.

VDD pacemakers have a single pacing lead which has two floating ring electrodes located on the portion of the lead that is present in the right

atrium and these electrodes are responsible for sensing intrinsic atrial P-wave unlike DDD pacemakers which employ a separate atrial pacing lead for sensing of intrinsic atrial P-waves and atrial pacing^(5, 11, 13).

The advantages of using VDD pacemakers is obvious in patients with second degree or third degree heart block having normal sinus node function who do not require atrial pacing, which is offered by DDD pacemakers^(3,4,9). In addition the use of a single pacing lead reduces the time needed for implantation of the pacemaker and also reduces the time the patient is exposed to X-ray during fluoroscopy and it is also cheaper for such patients than DDD pacemakers. VDD pacing provides reliable chronic atrial sensing to permit maintenance of atrioventricular synchrony. VDD pacing may reduce the frequency of implant and long term complications because of the reduced number of leads involved^(1, 2, 10).

The disadvantages of VDD pacemakers in comparison with DDD