

## ARRHYTHMIAS MINERVA TRIAL RESULTS REPORTED

An international group of investigators has reported the superiority of atrial preventive and atrial antitachycardia pacing (aATP) with managed ventricular pacing (MVP) over standard dual-chamber pacing in patients with bradycardia and atrial arrhythmias. These results from the multicentre, randomized MINERVA study, which was conducted in 15 countries, have been published in the *European Heart Journal*.

Atrial fibrillation (AF) is a common complication of bradycardia, and many patients with these arrhythmias undergo pacemaker implantation even though the optimum method of pacing has not been established. Dual-chamber pacing has been associated with a trend towards the development of permanent AF that, in turn, increases the risk of stroke and cardiovascular morbidity and mortality.

The MINERVA investigators enrolled patients with an indication for dual-chamber pacing and a history of paroxysmal or persistent AF, atrial flutter, or atrial tachycardia. All participants were implanted with an EnRhythm® (Medtronic, Inc., USA) pacemaker and commenced a 1 month run-in period to ensure that they did not need ventricular pacing. Patients were then randomly assigned to receive standard dual-chamber pacing (DDDR; control group), atrial preventive pacing and aATP (DDDRP) plus MVP, or DDDR plus MVP (MVP group). A total of 1,166 patients completed follow up.

During the 24-month follow-up period, the incidence of the primary composite end point (death, cardiovascular hospitalization, or permanent AF) was significantly lower in the DDDRP plus MVP group than in the control group (19.8% vs 26.5%; HR 0.74, 95% CI 0.55–0.99,  $P=0.04$ ). Patients in the DDDRP plus MVP group also had a significantly reduced risk of permanent AF compared with both the control group (HR 0.39, 95% CI 0.21–0.75,  $P=0.004$ ) and the MPV group (HR 0.49, 95% CI 0.25–0.95,  $P=0.034$ ). The median AF burden was also lower with DDDRP plus MVP compared with the other two pacing strategies. Symptoms of AF were improved in all groups. The investigators concluded that “the combined effect of MVP and aATP therapies prevented the progression of atrial tachyarrhythmias to permanent AF.”

**Alexandra Roberts**

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