Single Chamber Leadless Pacemaker Implantation for the Treatment of Cardioinhibitory Vasovagal Syncope - a United Kingdom Perspective

Michael Chi Yuan Nam  
Christopher Pepper  
Christopher Rinaldi  
Matthew Bates  
Andrew Thornley  
Riyaz Somani  
Khalid Abozguia  
Stuart Harris  
Archana Rao  
Michala Pedersen  
Janet McComb  
Ewen Shepherd  
Oliver Segal  
Richard Schilling  
Amir Zaidi  
Paul Roberts

**Introduction**: The use of pacemakers in the treatment of cardioinhibitory vasovagal syncope is controversial with a mixed message from the limited evidence base. Single chamber leadless pacemakers have been shown to be an effective alternative option to conventional pacemakers, but their benefit within the context of cardioinhibitory vasovagal syncope is unknown. This study examines the use of leadless pacemakers in a cardioinhibitory vasovagal population in the United Kingdom.

**Methods**: Observational data on 32 patients implanted with the Micra Transcatheter Pacemaker System for vasovagal syncope are presented. Data was collected on implant indications, implant procedure and follow up data from 12 centres across the United Kingdom that had elected to use a Micra leadless pacemaker in this patient population.

**Result**: 32 patients aged 37±14 years (range 18 to 64 years) with 62% of the patients being female were recruited to the study. Vasovagal syncope was diagnosed clinically and with the support of Holter ambulatory cardiac monitoring, tilt table testing and implantable loop recorders. The duration of symptoms was 8±8 yrs with an average frequency of syncope being 4±6 times/year. The mean longest documented R-R interval was 13±7 seconds. The Micra pacemaker was successfully implanted in all patients with a major complication rate of 3.1%. Patients were followed up for 404±237 days (range 63-928 days). At follow up 28 (87%) patients were free from symptoms.

**Conclusion**: This observational study suggests that the use of a single chamber leadless pacemaker in the treatment of cardioinhibitory vasovagal syncope might be a reasonable clinical option.