

## **Long-term Follow-up of Pacemaker Therapy for Ictal Asystole Caused by Temporal Lobe Epilepsy**

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**Background and purpose:** Ictal asystole (IA) caused by temporal lobe epilepsy (TLE) is an infrequent cause of bradycardia-triggered transient loss of consciousness (T-LOC) but one which is therapeutically important to recognize. However, although TLE may be associated with long asystolic events, controversy remains regarding the necessity of cardiac pacemaker treatment versus the anti-epileptic drugs (AEDs). The purpose of the study was to evaluate the role of pacemaker therapy in TLE patients who presented with IA.

**Methods:** Six patients (2 men, mean age of  $66 \pm 16$  years) with documented prolonged asystole on ECG in association with TLE by electroencephalogram, were followed for an average 19.7 years (range 2-37 years). Mean IA duration was  $12.6 \pm 6.2$  sec. (range 3.5 sec. to 20 sec). All patients were treated with antiepileptic drugs (AEDs), and 4 patients received combined therapy with pacemaker implantation for back-up pacing at 40 beats/min. The remaining 2 patients were treated with AEDs alone, but underwent ambulatory monitoring at for  $\geq 3$  years by an implantable loop recorder (ILR).

**Results:** All patients were successfully treated with no recurrence of T-LOC episodes or reported epileptic seizure during follow-up. Regular pacemaker / ILR interrogation in the pacemaker clinic after initiation of AED therapies showed no evidence of necessary pacing intervention (cum%Vp=0%) in 4 pacemaker or of asystole events in the 2 ILR patients.

**Conclusions:** AED therapy appears to be very effective for IA prevention in TLE. Pacemaker implantation is not needed in most cases, and should reserved for AED failures.