

## **EPS For Syncope Evaluation: The Rate of Adherence to the Guidelines and the Implications On the Clinical Outcome**

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**Background:** Syncope is a frequent clinical problem and presents major challenge in the field of diagnosis and treatment. Electrophysiology study (EPS) is one of the diagnostic tools to determine the etiology of syncope. The importance of this test in elucidating the reason for unexplained syncope is still not fully determined.

**Objective:** To evaluate the effect of Electrophysiology Study, as recommended by The European Society of Cardiology, on the morbidity and mortality of patients with unexplained syncope.

**Methods:** The outcome of patients with unexplained syncope who had an EPS was compared with the outcome of patients with unexplained syncope and without EPS. In patients, admitted to the Hadassah University Hospital between 2001-2006, the recurrence of syncope, pacemaker and defibrillator implantation were evaluated.

**Results:** In among 2954 patients admitted with syncope between 2001 and 2006, 681 had unexplained syncope. From among these patients in 91 (13.3%), although qualified for EPS according the ESC guidelines, the test was not performed and were compared with 52 patients who had EPS following the syncope. In patients with EPS more pacemaker were implanted (36% vs. 8.8%,  $p<0.001$ ) and more ICD were implanted (21.2% vs. 1.1%,  $p<0.001$ ). There was no difference in the recurrence of syncope between the two groups (17.3% vs. 15.4%,  $p=0.8149$ ). The mortality was similar in the two groups (22.0% vs. 15.4%,  $p=0.2671$ ). The main differences between the two groups were: all the patients with non-sustained ventricular tachycardia in Holter were referred to EPS and there was tendency not to refer patients with small Q waves on ECG to EPS (3.8% vs. 45.1%,  $p<0.001$ ).

**Conclusions:** In Hadassah University Hospital, the referral of patients with unexplained syncope to EPS was individualized with partial adherence to ESC guidelines. Patients with EPS had more pacemakers and ICD implanted without significant difference in the recurrence of syncope and mortality. This apparent discrepancy may suggest that patients referred to EPS were considered to be on a higher risk and EPS guided therapy provides adequate protection. Incidental Q waves on ECG may not predict presence of structural heart disease and increased risk.