Syncope Dx Moving to Implantable Recorders

BY MITCHEL L. ZOLER

Implantable loop recorders play an increasingly important role in assessing patients for syncope, say several experts as well as the most recent syncope guidelines, released by the European Society of Cardiology last August.

Implantable loop recorders [ILRs], introduced for syncope assessment about a decade ago, "are steadily becoming more and more widely acknowledged as an important diagnostic device by arrhythmologists and other experts active in the investigation of unexplained syncope in daily practice," said Dr. Panos E. Vardas, an electrophysiologist and professor of cardiology at the University of Crete, Greece, and president of the European Heart Rhythm Association.

"Patients with infrequent, short-duration, transient symptoms, recurring over weeks or months, are unlikely to be diagnosed by conventional Holter monitoring, since the likelihood of symptom-ECG correlation is very low. In such patients, following careful evaluation of the patient's history, physical examination and ECG, when syncopal episodes remain unexplained, ILRs are no longer implemented as a last option but earlier in the evaluation algorithm," Dr. Vardas said in an interview.

"The main indications include repeated episodes of unexplained syncope, syncope with injury, and syncope with special kinds of loss of consciousness such as differentiating between cardiac syncope and epilepsy. Especially in the case of atrial fibrillation, in which some paroxysms also lead to syncope, I am expecting the use of ILRs will change the whole understanding we have of the natural history of the disease," he said.

"Today, ILRs are the most valuable tool for the diagnosis of the arrhythmic mechanism of syncope," and "are expected to become the gold standard for diagnosis of arrhythmic syncope," said Dr. Richard Sutton, professor of clinical cardiology at Imperial College, London, and cochair of the European Society of Cardiology (ESC) task force that wrote the 2009 guidelines for diagnosing and managing syncope (Eur. Heart J. 2009;30:2631-71). "The new ESC guidelines for syncope attempt to bring the ILR into the forefront of investigation of syncope based on the experience reported in the literature," Dr. Sutton said in a talk at the ESC annual meeting in Barcelona last August.

"ILRs are clearly underused," said Dr. Christophe Leclercq, professor of cardiology and vascular diseases at Pontchaillou Hospital in Rennes, France. "I think that in patients with severe syncope, the role of ILRs will dramatically increase, improving the diagnosis of syncope and also avoiding misdiagnoses, such as epilepsy."

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DR. SUTTON

Evidence for the utility of ILRs in distinguishing arrhythmogenic syncope and epilepsy came in a report at the last ESC annual meeting. Researchers from Manchester (England) Royal Infirmary studied 41 adult patients who had been tentatively diagnosed with epilepsy, but for whom further review by a neurologist raised doubt about their status.

All patients receive an ILR, and the researchers eventually identified seven patients (17%) who experienced a heartbeat stop of 4-89 seconds that caused their loss of consciousness.

Despite these views, other electrophysiologists remain skeptical that ILRs play a major part in syncope assessment. "We use ILRs in patients with infrequent episodes, maybe one or two over 18 months, and we probably use ILRs more than we did 5 years ago, but we put in perhaps six a year," said Dr. S. Adam Strickberger, professor of medicine at Georgetown University in Washington, and head of electrophysiology at Washington Hospital Center.

ILRs are "a useful tool in only a small subset of patients, probably less than 5%," he said in an interview. "Half of patients with syncope have a vasovagal cause," and hence are not candidates for ILR assessment. Among the remaining syncope patients, a large fraction have a low ejection fraction that makes them immediate candidates for a defibrillator with no need for ILR assessment.

Dr. Strickberger agreed, however, that tilt table testing is rarely used today, and that electrophysiology testing of syncope patients has also dropped. A patient's history serves as the major starting point for syncope assessment, he said. Dr. Strickberger chaired the most recent American College of Cardiology and American Heart Association committee to issue a scientific statement on syncope assessment, in 2006 (J. Am. Coll. Cardiol. 2006;47:473-84).

An ILR, roughly the size of a memory stick, continuously records a patient's ECG onto a memory loop of about 20 minutes. Patients activate their recorders following an episode so that the prior 20 minutes of ECG recordings are preserved for later assessment to search for correlates between the syncope event and arrhythmia. Implantation of ILRs is subcutaneous on the chest, using local anesthesia, and does not require lead placement, making the process relatively noninvasive. ILRs have a battery life of up to 3 years.

Prolonged ECG monitoring to find disease-related ECG abnormalities is the biggest attraction of ILRs. The alternatives, Holter monitors and external loop recorders, are not practical for monitoring that might take months or years, and an in-hospital electrophysiology study carries no guarantee that an induced arrhythmia replicates the cause of spontaneous syncope.

According to the ESC guidelines, although ILRs have a "high initial cost … if symptom-ECG correlation can be achieved in a substantial number of patients … the implanted device may be more cost effective than a strategy using conventional investigation."

The guidelines cite two class I indications (which means there is evidence for or general agreement that the procedure is effective and useful) for ILRs in assessing syncope: in the early phase of evaluating patients with recurrent syncope of uncertain origin who lack high-risk criteria but have a high likelihood of a recurrent episode during the ILR's battery life, and in high-risk patients whose initial evaluation did not identify a cause of syncope. An additional, more equivocal use of ILRs is to assess the role of bradycardia in patients with known or suspected reflex syncope prior to starting cardiac pacing.

"Tilt table testing is becoming less frequent, and electrophysiology studies should be exceptional," Dr. Andrew D. Krahn said at the American Heart Associations scientific sessions last November in Orlando. The first and best tool for evaluating the likely cause of syncope is a detailed patient history, he added.

In addition to history, assessment of unexplained syncope is largely guided by left ventricular function, Dr. Krahn said. In patients with a left ventricular ejection fraction of less than 30%, the prime option is to forgo further testing and consider placing an implantable cardioverter defibrillator. In patients with better left ventricular function, ILRs serve as the ultimate arbiter for hard-to-assess patients.

In patients with an ejection fraction of more than 45%, tilt table testing may be appropriate if a vasovagal cause is suspected, said Dr. Krahn, an electrophysiologist in the arrhythmia service at the London (Ont.) Health Sciences Centre, and a member of the ESC syncope guidelines task force.

If an arrhythmia cause is the primary suspect, external monitoring is a potential first choice, and external monitoring might also follow a failed tilt table test. But if external monitoring fails to make the diagnosis, then an ILR is the next step, he said.

Dr. Vardas has been a speaker for Medtronic and St. Jude, companies that market ILRs. Dr. Sutton has received research grants from, and has been a consultant to, Medtronic. Dr. Leclercq has been a consultant to Medtronic and St. Jude. Dr. Strickberger has been a consultant to St. Jude. Dr. Krahn has received research grants from, and has been a consultant to, Transoma, a third company that had marketed an ILR. (Transoma went out of business late last year.) ■

Consider Statins in Nondyslipidemic Heart Failure Patients

BY BRUCE JANCIN

SAN DIEGO — Statin therapy slashed appropriate implantable cardioverter-defibrillator shocks by 54% and all-cause mortality by 95% in a nonrandomized observational study of patients with advanced heart failure on combined ICD and cardiac resynchronization therapy.

The clinical implication of these findings is that patients with heart failure treated with combined ICD and CRT ought to be placed on a statin, whether they're dyslipidemic or not, according to Dr. Harit Desai of New York Medical College, Valhalla.

The study involved 209 heart failure patients who received dual device therapy based on the current indications. During a mean 35 months of follow-up, appropriate ICD shocks occurred in 18% of the 122 patients on statin therapy and in 34% of those who were not on statins, Dr. Desai reported at the annual meeting of the American College of Chest Physicians.

Death occurred in 2% of the group on statin therapy, compared with 10% of those who weren't. Two-thirds of patients not on a statin were dyslipidemic.

The use of beta-blockers and amiodarone was similar in the statin users and nonusers. However, angiotensin-converting enzyme or angiotensin receptor blocker therapy was significantly more common in the statin-treated group, by a margin of 75%-63%.

In a stepwise Cox regression analysis adjusted for potential confounding variables, the three factors associated with the rate of appropriate ICD shocks were statin therapy, which reduced the rate by 54%; diabetes, which reduced appropriate shocks by 66%; and smoking, which increased the likelihood of appropriate shocks 3.5-fold.

Diabetes was independently associated with a 4.3-fold risk of all-cause mortality during the follow-up period. Hypertension conferred a 14.2-fold risk. Digoxin therapy was associated with a 4.2-fold risk of mortality.

The mechanism by which statin therapy protects against appropriate ICD shocks is unclear but does not appear to involve lipid lowering.

Dr. Desai reported having no financial conflicts in connection with this study. ■