Sympathetic Evaluation at a Crossroad
For Which Patients?

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Syncope is one of the most common, alarming, and
c launching symptoms with which cardiologists, and
most other physicians, grapple.1,2 It can cause injury
and disability, affect lifestyle and quality-of-life, and be an
expensive management nightmare.3–5 Causes range from
isolated, benign, situational, and “dysautonomic” events to
life-threatening ventricular arrhythmias.6–7

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A thoughtful history and complete physical examination,
performed by an astute clinician, will provide diagnostic
clues to guide management.2,8,9 Unfortunately, the approach
often undertaken includes low-yield testing (EEG, CT scan,
carotid Dopplers, Holter monitor, and cardiac enzymes),2,4,10
yet even “proper” testing (electrophysiology testing and tilt
table testing) can be fruitless. In nearly half of all patients, no
diagnosis is secured.2,6,11 Although an implantable loop
recorder (ILR) may be useful when all else fails,12 no
randomized trial has provided evidence that it is the best
initial approach when the history does not provide a diagno-

Krahn et al13 report the first prospective, randomized trial
of the ILR as the initial approach when the cause for syncope
could not be gleaned from a circumspect evaluation. They
address an important clinical problem and provide new
insight into methods to assess syncope. The best way to
identify the cause is to monitor the episode. The ILR can do
just that: it can provide a diagnosis efficiently, apparently
safely, and correctly, but this approach does not yet revolu-
tionize syncope management.

Patient selection criteria are crucial. The study impact
depends on who is enrolled, but this criterion remains
obscure; those included were referred and selected. Consider
that the risk, expense, and time required to implant an ILR is
unwarranted in patients with a low risk for recurrence and for
those whose syncope is benign (eg, situational and neurocar-
diogenic syncope). The history is key, but neurocardiogenic
mechanisms can trigger syncope, even when the cause is
obscure.14 A tilt table test may help exclude these low-risk
patients before implanting an ILR.

The population selected here was at low risk for death, but
it is clear that some syncope patients have imminent demise
from cardiovascular death. How these patients were excluded
is unknown. Consider the following example. A patient with
ischemic heart disease, mildly impaired ventricular function,
and a bundle branch block who has had coronary revascular-
ization is admitted for recurrent syncope and collapse. Should
this patient get an ILR as a first-line approach? It is possible
that the ILR will record the cause of the next event for
posterity: ventricular fibrillation. What about the patient with
dilated cardiomyopathy and abrupt, unexplained syncope?
The benefit of the ILR in this population remains unknown.

So, if patients with extremely benign causes for syncope
should not be considered, yet those with serious, but undiag-
nosed, causes should also not be included, then who should
be considered for an ILR as a first-line diagnostic approach?

The evaluation before ILR was not standardized and,
therefore, the diagnosis of heart disease may have been
missed. Criteria for echocardiography, cardiac catheteriza-
tion, and treadmill testing are vague. A need to perform
electrophysiology testing in patients with preserved left
ventricular function and those without ischemic heart disease
is not supported.

The ILR cannot distinguish bradycardia by mechanism
(neurocardiogenic from intrinsic disease). Not all bradycardia
in a syncope patient requires a pacing device. Treating
bradycardia with a pacemaker in a patient with neurocardio-
diogenic syncope may not necessarily prevent recurrent syncope.
One patient in this trial treated with a pacemaker still had
recurrent syncope.

The extraordinarily low recurrence rate of syncope in a
substantial segment of the patients with a negative diagnostic
evaluation suggests that (1) these patents may not require an
aggressive assessment (perhaps there is a way to exclude such
patients); (2) those with a positive evaluation had a treatment
that exacerbated or did not treat their syncope; (3) neither
approach was capable of arriving at all diagnoses in the time
allotted; and/or (4) the diagnosis of syncope is incorrect.

A role for the ILR in syncope evaluation exists, but for
which patients? One crossroad in syncope evaluation has
arrived. Others roads must be crossed. Carefully controlled,
clinical trials clearly enunciating the population will define
the exact role of ILR. A device that can measure heart rate
and hemodynamic response would be more accurate to define
the cause and mechanism for syncope. Even better would be
a device that measures these parameters along with an
electroencephalogram, cerebral blood flow, and hormonal
and blood sugar changes. In the future, perhaps, this will be
possible.
References


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