

## **Medscape – Syncope Guidelines**

**DR. PETER A. NOSEWORTHY:** Greetings, I am Dr. Peter Noseworthy, an electrophysiologist at Mayo Clinic in Rochester, Minnesota. During today's commentary, we will be discussing the recently released ACC/AHA Syncope Guidelines. I am joined by my colleague, Dr. Win Shen, who is the lead author of these guidelines and the Chair of the Division of Cardiovascular Diseases at Mayo Clinic in Arizona. Welcome Win.

**DR. WIN-KUANG SHEN:** Thank you so much, Peter.

**DR. PETER A. NOSEWORTHY:** First off, congratulations on these guidelines. I know your team has put a lot of work into this, and speaking as a clinician, I know we are all going to be very happy to have some guidance on the issue.

**DR. WIN-KUANG SHEN:** Yes, thank you. It took real teamwork for two years before we got to this point.

**DR. PETER A. NOSEWORTHY:** Yes, I am aware. Now, syncope is so common; 40% of us will have syncope at some point in our lives, and I was actually surprised to see that these were the first formal guidelines from the AHA and ACC regarding syncope, but why do you think they were so long in coming?

**DR. WIN-KUANG SHEN:** That is a great question, and I can only give you my perspective. Syncope is so common and it is a symptom, so it really can be associated with so many conditions, so if you are looking in the past, you will see that there were reviews, summaries, and statements from different societies. From American Heart, ACC, and the Heart Rhythm Society, about ten years ago, there was a scientific statement on syncope<sup>1</sup> with a focus on sudden death prevention. So when the syncope proposal was put forth to the guideline task force at ACC and AHA, it was immediately recognized that we should provide a more comprehensive recommendation for this very diverse group of patient population, and so this was commissioned about two to three years ago when we started working on this paper.

**DR. PETER A. NOSEWORTHY:** Syncope, of course, is a very broad topic, so what were your overall goals of these guidelines?

**DR. WIN-KUANG SHEN:** There were several. The first goal was to set the standard definition for syncope and many other associated conditions. The reason why that was so important is because if you look at current papers and studies, the definitions for different conditions vary quite a bit. So that was the first goal. The second goal, of course, was to recommend and set the standard practice for a large body of physicians and healthcare providers—for cardiologists, electrophysiologists, internists, and neurologists, emergency room physicians—and in this document, we also included the pediatric population. That is the second broad scope as well as the goals. The third was to identify some of the areas that we are in need of additional data and to then facilitate future clinical studies. These were the three main goals.

**DR. PETER A. NOSEWORTHY:** Getting to the meat of the guidelines, let us start with making a diagnosis. One of the challenges in syncope is knowing how much testing to do. We all try to

avoid unnecessary testing. Can you tell me what is essential in the workup for everyone with syncope?

**DR. WIN-KUANG SHEN:** You will see that the writing committee really came to a consensus uniformly recommending that a detailed history and examination for the initial evaluation is obligatory. Second is that after a lot of debate and deliberation, we recognized that even though the diagnostic value of ECG is at a low yield, it does carry a significant prognostic value. So we also recommended ECG as part of the initial evaluation, and it is absolutely correct that in this guideline, you will see that we recommend not doing broad diagnostic testing and broad testing for blood test imaging modalities.

**DR. PETER A. NOSEWORTHY:** For patients with clear-cut vasovagal syncope, a history and physical and an ECG is sufficient.

**DR. WIN-KUANG SHEN:** That is correct.

**DR. PETER A. NOSEWORTHY:** Are there any tests that are not recommended, the class III recommendations, for instance?

**DR. WIN-KUANG SHEN:** There are several class III recommendations but, perhaps, I should qualify what I am going to say by saying that the clinical judgment and what you will see in the guidelines is that we frequently evoke the phrase “in selected patient populations.” For instance, we made a recommendation not to do broad blood testing in patients presenting with simple and vasovagal syncope, but on the other hand, if a person comes in with chest pain, of course, additional blood testing should be considered. The other areas that we made class III recommendations would be imaging. For instance, we do not recommend broad scope cardiac imaging, CT, MRI for patients with a normal ECG without a prior history of heart disease, and we also recommend not doing broad neurological imaging like carotid ultrasound, CT scan, and MRI scan of the head and neck.

**DR. PETER A. NOSEWORTHY:** In the emergency department, a common challenge is who should be admitted to the hospital. Do the guidelines give any recommendations on this?

**DR. WIN-KUANG SHEN:** Yes, in this guideline, we made very clear recommendations with a summary table with the serious medical conditions. If a patient presents with one or more of the conditions that belong to the serious medical conditions, admission to the hospital would be recommended, and these are actually fairly intuitive. For instance, a patient presented with syncope, with ventricular tachycardia, a patient presented syncope: although that etiology has not been confirmed but was with serious head trauma, these are the conditions that admission for evaluation should be considered.

**DR. PETER A. NOSEWORTHY:** As an electrophysiologist, I find that we are doing fewer and fewer EP studies, but there is still probably a role for an EP study in selected patients. Can you expand on that?

**DR. WIN-KUANG SHEN:** Yes, EP study, as we know 20 or 30 years ago, was viewed as the court of the final appeal for syncope evaluation. Through the years, we learned the value of the EP study and perhaps the sensitivity and specificity vary depending on different conditions. The #2

reason why the EP study has decreased through the years is because, as we know, patients with structural heart disease with non-ischemic cardiomyopathy with reduced ejection fraction <35% and with or without syncope, these patients qualified for an ICD. Furthermore, we have so many different monitoring devices today that allow us to monitor these intermittent episodes. As a result, the value of the EP study has diminished, but in patients after myocardial infarction and with a preserved ejection fraction at say 30 or 45%, these are the patients in which EP study can be useful.

**DR. PETER A. NOSEWORTHY:** Similarly, for tilt-table testing, although we still do tilt-table testing at Mayo Clinic and I know other centers do, some have entirely abandoned the process or the test altogether. What are the recommendations for tilt-table testing?

**DR. WIN-KUANG SHEN:** Most times, the diagnosis of vasovagal syncope can be made after a thorough initial evaluation with a history and physical examination. In patients where the recurrent episodes are not very well-defined or when the presentation is not typical of vasovagal syncope, this is the time that the tilt-table testing can be useful.

**DR. PETER A. NOSEWORTHY:** Moving on to management, the management of recurrent vasovagal syncope is a major challenge for cardiologists, and the various therapies—beta blockers, Florinef, midodrine, SSRIs, pacemakers, compression stockings, salt tablets, and so on—have all really had limited benefit. What are the evidence-based recommendations for management of recurrent vasovagal or neurocardiogenic syncope?

**DR. WIN-KUANG SHEN:** As you already mentioned, the use of pharmacological interventions. When we reviewed the evidence, sure there are some clinical trials and lots of observational studies, but if we combine the scope, the quantity, and quality of the data, most of these recommendations for pharmacological therapy actually became a class IIb. We made one class I recommendation based upon expert opinions, and that is to educate the patient to make sure they understand that vasovagal syncope, overall, is a benign condition, and if they could prevent triggers and also pay attention to the initiating prodromes, a lot of times vasovagal syncope could be prevented.

**DR. PETER A. NOSEWORTHY:** Should any of these patients receive a pacemaker?

**DR. WIN-KUANG SHEN:** Yes, a lot of studies have been performed—randomized trials, double-blinded, and not double-blinded studies. As a matter of fact, this was the question we put forth to the evidence review committee, and you were a member of the writing committee on the evidence review. We asked the evidence review committee in a very thorough manner and did extensive literature research, and we specified the studies as to the types of studies, the duration of the study, did the inclusion/exclusion criteria meet the criteria to be analyzed in the meta-analyses. After this process, the writing committee of the guidelines, when it came to the final decision of making the recommendation of pacemakers, made the pacemaker to be a class IIb recommendation in patients who are older than age 40 with recurrent vasovagal syncope with documented spontaneous pauses.

**DR. PETER A. NOSEWORTHY:** What qualifies as a significant pause for pacemaker implantation?

**DR. WIN-KUANG SHEN:** They followed the exact definition from the clinical trials, and that is when the pause is documented associated with symptoms of syncope, that pause is defined as greater than or equal to three seconds. In a person without syncope, when a pause is documented to be six seconds or longer, those two situations would qualify as a pause and the pacemaker could be considered in patients with recurrent syncope and older than age 40.

**DR. PETER A. NOSEWORTHY:** Another thing that comes up a lot in practice is driving. Do these guidelines make recommendations about driving after syncope?

**DR. WIN-KUANG SHEN:** This was a very, very important topic but, at the same time, was very challenging. The writing committee discussed, deliberated, and reviewed extensively the evidence, and we really could not reach, to the level of consensus, recommendations. After discussion with the task force committee, with the chair of the task force, after reviewing all of the evidence, we did the following: 1) we made one recommendation that physicians and healthcare providers should be familiar with both the local and federal laws about driving after syncope. 2) When it comes to commercial driving, we recognize that it is really not the healthcare providers that are making the recommendations about commercial drivers, it is the Department of Transportation that have strict guidelines about whether commercial drivers could drive or not drive, so we defer that to the federal law from the Department of Transportation. When it comes to private driving, what the writing committee did was that we made a summary of a table of all of the conditions to suggest an observational period without recurrent syncope, and then the patients would be allowed to resume driving. There was no formal recommendation for private driving, but we did make suggestions with a summary table.

**DR. PETER A. NOSEWORTHY:** Thank you. That is very useful. I would like to thank Dr. Shen for joining us today to review the new ACC/AHA Syncope Guidelines, and thank you for joining us on TheHeart.org on Medscape.

References:

1. Goldberger JJ, Cain ME, Hohnloser SH, Kadish AH, Knight BP, Lauer MS, Maron BJ, Page RL, Passman RS, Siscovick D, Stevenson WG and Zipes DP. American Heart Association/american College of Cardiology Foundation/heart Rhythm Society scientific statement on noninvasive risk stratification techniques for identifying patients at risk for sudden cardiac death: a scientific statement from the American Heart Association Council on Clinical Cardiology Committee on Electrocardiography and Arrhythmias and Council on Epidemiology and Prevention. *Heart rhythm*. 2008;5:e1-21.