Host: Welcome to the SEE Podcast, presented by the American Society of Anesthesiologists. SEE, translating emerging anesthesia knowledge for your daily practice.

Robert L. Hsiung, M.D.: Welcome to this podcast of SEE. This is Robert Hsiung, one of the editors of SEE and I am with Dr. Vijay Gaba, one of our writers, and we have a very interesting topic today. But first, Dr. Gaba, would you tell us a short little bit about yourself and how you got to be a SEE writer.

Vijay K. Gaba, M.D.: Thank you, Dr. Hsiung. I am a staff anesthesiologist at a community hospital in a moderate-sized town in North Dakota. I regularly attend ASA conferences to keep myself updated. I started the journal club in our department.

I have found the SEE questions useful and have used the questions as a source for journal articles for discussion. Later on, I realized that I could be a question writer for SEE and I have been doing that for the last three years. This has been very stimulating for me.

I also attend a SEE editorial board meeting each year to learn more about how to write questions.

Robert L. Hsiung, M.D.: I want to thank you for being a writer. I, too, think of SEE as a journal club and to have an anesthesiologist at a community hospital involved in SEE
really brings me great satisfaction that everyone everywhere is striving to
learn the newest, cutting-edge medicine out there.

So, we’re going to move on to our question. Today’s question is Item 100 in
Issue 34A. It reads: The authors of a recently published study investigated
changes in cognitive function following transcatheter aortic valve
replacement; that’s TAVR. According to this study, which of the following
statements is most likely true?

The choices are:
A) In the majority of patients, there was global improvement in cognitive
function regardless of pre-TAVR cognitive status.
B) Patients with cognitive impairment pre-TAVR had the most profound
cognitive decline.
C) In the majority of patients, cognitive function declined over the first 30
days.
D) In the majority of patients, cognitive function was found to be reduced
only at one year.

So, the answer is A: In the majority of patients, there was global improvement
in cognitive function regardless of pre-TAVR cognitive status.

Dr. Gaba, would you please give me a summary of this study on how it was
done; and for those who do not know, maybe also a little background on what
a TAVR is?

replacement. It is a form of minimally invasive surgery that repairs the aortic
wall without removing the old, damaged one. Instead, a prosthetic aortic valve
is wedged into the original aortic wall.
This is done through a catheterization procedure. This procedure is fairly new and is indicated for people with symptomatic aortic stenosis who are considered an intermediate or very high risk for the traditional form of open valve replacement surgery.

Now, about this study, the cognitive impact of transcatheter aortic valve replacement was assessed in a recent study of 51 TAVR patients; the median age was 80 years. Prospective assessment of cognitive function was conducted using the Montréal Cognitive Assessment or in short it is called MoCA.

It was done preoperatively and at 30 days and at one year post-operatively. The processing speed and executed cognitive functions were also assessed using a digital symbol substitution test, trail-making test, verbal fluency test and animal-naming test at the same time points.

Cognitive decline was determined by changes in mean scores of each of these tests and the practice-adjusted reliable change index. The latter accounts for measurement errors and practice effects.

Robert L. Hsiung, M.D.: So, were these cognitive declines real and long-lasting? I mean, I guess there was this cognitive improvement.

Vijay K. Gaba, M.D.: Yes. So, it should be remembered that overall the cognitive status did not decline; it actually improved with TAVR. Among patients undergoing successful TAVR, more than 80% had stable or improved cognitive function at one year.

The mean MoCA score, which we did there, improved at 30 days’ assessment and remained stable at one year. These results were statistically significant. In
the subset analysis, those who were cognitively impaired at baseline showed the most improvement.

Robert L. Hsiung, M.D.: So, what was the authors’ reasoning why TAVR patients did better?

Vijay K. Gaba, M.D.: There was no exact reason so far proved. But the improvement in cognitive function is attributed to relief of the long-standing, flow-limiting aortic stenosis. Basically, it leads to better brain perfusion and improved cognitive function.

Robert L. Hsiung, M.D.: Do we know if there’s comparison with, say, open heart aortic valve surgery and would this data suggest that we should do TAVR over open heart?

Vijay K. Gaba, M.D.: This has never been a direct head-to-head comparison of the two procedures, but no surgical valve replacement study so far has shown improvement in neurocognitive function at short-term or long-term follow-up.

Robert L. Hsiung, M.D.: Thank you for your time, Dr. Gaba and for you listeners tuning in. I’ve learned a lot today and I hope you all did as well.

Vijay K. Gaba, M.D.: Thank you, Dr. Hsiung, my pleasure.

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