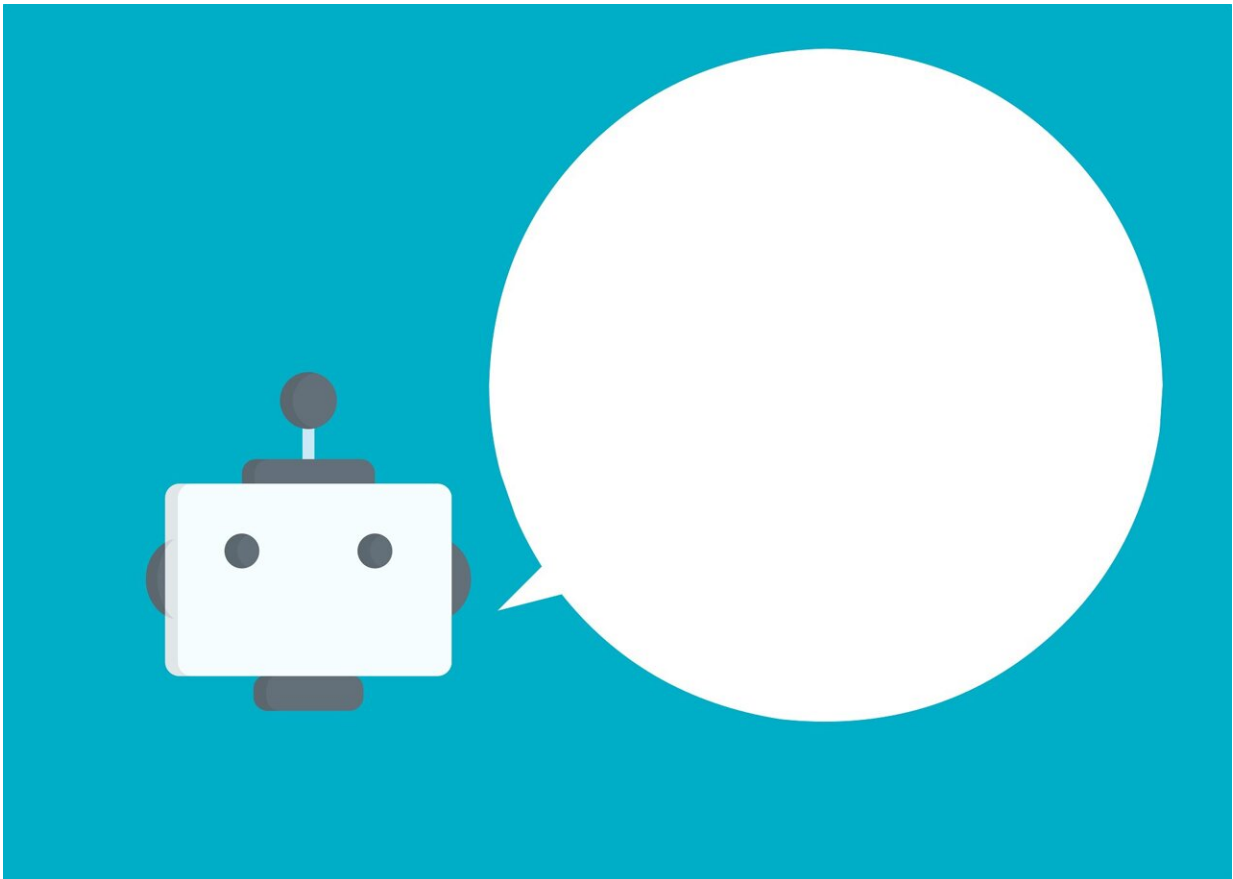# Medical Xpress

AI-based virtual voice assistant successfully bridges care gap for heart patients

August 27 2024

Credit: Pixabay/CC0 Public Domain

Clinical follow-up using virtual voice technology helped identify complications after transcatheter aortic valve implantation (TAVI) with

a high degree of patient satisfaction, according to research presented at [ESC Congress 2024](#).

Explaining the rationale for the development of the virtual voice assistant for TAVI patients, study author Dr. Marta Herrero Brocal from the Dr. Balmis General University Hospital of Alicante, Spain said, "Aortic valve stenosis is common, especially in the aging population. It can be treated with surgery or with TAVI, a less invasive procedure. Complications may occur after TAVI, especially within the first month, but due to a lack of resources, many hospitals are not able to provide the intense follow-up needed after patient discharge.

"Based on artificial intelligence and [natural language processing](#), a new application was developed for the virtual voice assistant, 'LOLA,' which is able to make more than 40 phone calls in 2 hours, allowing us to gather follow-up information and act accordingly. Results from the TeleTAVI study indicate that we can provide excellent care virtually, without substantially increasing resources."

TeleTAVI was a prospective, observational, single-center study conducted at the Dr. Balmis General University Hospital of Alicante, Spain. All patients undergoing TAVI via the [femoral artery](#) in 2023, without [language barriers](#), were offered the option of follow-up with the virtual voice assistant. LOLA called the patients in week 1, week 2, month 1, month 3 and month 12 after patient discharge.

In these calls, a series of questions were asked, mainly related to vascular access and the patient's cardiovascular situation. After finishing the call, all the information collected was uploaded to a web platform where the data were monitored by [health care professionals](#) who acted where necessary.

A total of 274 patients were included. The mean age was 81 years and

49.3% were women. Only 6 patients refused the follow-up option. A total of 1,039 calls were made, involving 385 hours of autonomous conversation, with an average duration of 4 minutes and 3 seconds per call. The calls were completed in 94% of cases, with the degree of adherence above 85% throughout the follow-up period. The patient answered in 89% of calls, with 11% answered by family members or caregivers.

No alerts were detected in 44% of calls, eliminating the need for review. Among the remaining calls, there were 926 alerts resulting in at least one intervention in 57% of the calls. The number of alerts decreased as follow-up progressed, reflecting the need for closer monitoring in the early stages after the procedure.

The virtual voice assistant also facilitated rapid patient discharge. Knowing that automated close follow-up was available, 40.1% of patients were able to be discharged within 24 hours of the procedure and 32.9% between 24 and 48 hours.

Patients generally had a favorable response to the virtual system. The satisfaction score was 4.68/5 and 89% of patients reported good or very good satisfaction. In total, 86% of patients said that they would recommend the use of LOLA.

Dr. Herrero Brocal concluded, "The TeleTAVI study found that follow-up with a virtual voice assistant enabled safe and early discharge after TAVI, with a low complication rate and without increasing the burden on health care resources. Patients know that behind LOLA is a doctor or a nurse so they are very happy to speak to it, as reflected in our high patient satisfaction rates."

  More information: Use of telemedicine with artificial intelligence for patient monitoring after transcatheter aortic valve implantation with a

virtual voice assistant, esc365.escardio.org/ESC-Congress/sessions/11983

Provided by European Society of Cardiology