Study: Kihon Checklist is useful tool in assessing frailty pre-heart valve surgery

December 21 2021

1	Do you go out by bus or train by yourself?	0.Yes	1.No
2	Do you go shopping to buy daily necessities by yourself?	0.Yes	1.No
3	Do you manage your own deposits and savings at the bank?	0.Yes	1.No
4	Do you sometimes visit your friends?	0.Yes	1.No
5	Do you turn to your family or friends for advice?	0.Yes	1.No
6	Do you normally climb stairs without using handrails or wall for support?	0.Yes	1.No
7	Do you normally stand up from a chair without any aids?	0.Yes	1.No
8	Do you normally walk continuously for 15 minutes?	0.Yes	1.No
9	Have you experienced a fall in the past year?	1.Yes	0.No
10	Do you have a fear of falling while walking?	1.Yes	0.No
11	Have you lost 2kg or more in the past 6 months?	1.Yes	0.No
12	Height: cm, weight: kg, BMI: kg/m^2 If BMI is less than 18.5, this item is scored	1.Yes	0.No
13	Do you have any difficulties eating tough foods compared to 6 months ago?	1.Yes	0.No
14	Have you choked on your tea or soup recently?	1.Yes	0.No
15	Do you often experience having a dry month?	1.Yes	0.No
16	Do you go out at least once a week?	0.Yes	1.No
17	Do you go out less frequently compared to last year?	1.Yes	0.No
18	Do your family or your friends point out your memory loss? E.g. "You always ask the same question over and over again"?	1.Yes	0.No
19	Do you make a call by looking up phone numbers?	0.Yes	1.No
20	Do you find yourself not knowing today's date?	1.Yes	0.No
21	In the last two weeks have you felt lack of fulfilment in your daily life?	1.Yes	0.No
22	In the last two weeks have you felt a lack of joy when doing the things you used to enjoy?	1.Yes	0.No
23	In the last two weeks have you felt difficulty in doing what you could do easily before?	1.Yes	0.No
24	In the last two weeks have you felt helpless?	1.Yes	0.No
25	In the last two weeks have you felt tired without a reason?	1.Yes	0.No

A simple self-reporting yes/no survey consisting of 25 questions that is used as a screening tool to identify frailty in the Japanese long-term care insurance system. Credit: Osaka City University

Transcatheter aortic valve replacement (TAVI) is a minimally invasive alternative to open-chest surgery in treating severe aortic stenosis, or a narrowing of the aortic valve—the heart's primary valve for regulating blood flow to the body's main artery.

As the procedure is increasing in an aging society, one major risk factor for death and disability following TAVI is frailty. The Kihon Checklist (KCL) is a 25 item, yes/no survey that helps screen patients for a variety of purposes, yet no clinical studies have focused on frailty calculated by the KCL in the TAVI cohort.

In a study published in the *Journal of Cardiology*, researchers from the Osaka City University Graduate School of Medicine investigated the 3-year prognostic impact of frailty evaluated by the KCL in patients who underwent TAVI and found that the estimated 3-year mortality rate was significantly higher in individuals who ranked high on the checklist.

"The KCL was originally developed to identify elderly individuals who were at risk of requiring support within the Japanese long-term care insurance system, independent of the concept of frailty," states lead author Yusuke Kure. There are several clinical scores that can be used to evaluate frailty status, but according to the research team, they have some shortcomings. For example, the Short Physical Performance Battery (SPPB) reflects a patient's lower-extremity muscle function but is difficult to acquire a score in daily practice because not all the candidates can perform sufficient examinations required for calculations. "The availability of the KCL which is correlated to a number of frailty phenotypes, along with other surgical risk scores, would be useful in identifying patients who are too frail to benefit from TAVI," states corresponding author Tsukasa Okai.

According to the study, which drew from a pool of 280 patients who underwent TAVI, a ROC curve analysis of the assessment of frailty calculated from the KCL was comparable to the SPPB (p=0.91) and the Clinical Frailty Scale (p=0.15). A multivariate COX regression analysis showed that the total KCL score, presence of diabetes mellitus, and presence of liver disease were independent factors for total mortality at three years after TAVI. In addition, Kaplan-Meier analysis of the total score of the KCL, in which 0–8 points were classified as no frailty, 9–12 points as mild frailty, and 12–25 points as frail, showed that total mortality at three years after TAVI was significantly higher in the frail group.

"Although the KCL is a self-reporting survey, our results indicate it may be possible to make a more objective evaluation by assessing various indicators related to frailty," says Dr. Yasuhiro Izumiya, "and the KCL could help in identifying optimal candidates for TAVI."

Provided by Osaka City University