

## Oncogeriatrics (part 8.)

### Frailty screening tools

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Various frailty screening tools have been developed. However, there is currently no single ideal model; some scores are better for population-level, whereas others are best suited for clinical screening and preoperative assessment. Therefore, the choice of the score might relay on specific clinical condition, the aim of the tool and department resources. The G8 and the aCGA seem to be the the most suitable in the case of preoperative frailty assessments of older patients with solid abdominal cancer who are undergoing high-risk surgery. They also may be used to identify patients at risk for adverse postoperative outcomes. They may support the decision process particularly in situations of lack of experience in full Geriatric Assessment (easy to master and implement), in acute admitted patients (time pressure or some of the domains cannot be assessed) and in case of low-/moderate-risk surgery (where extensive frailty evaluation may not influence the postoperative outcome).

**Key words:** older cancer patients, frailty screening, G8, aCGA, VES-13, TRST, Fried, GFI, Rockwood, Balducci

As was mentioned in the previous paper, the routine format of current preoperative requirements do not provide the information needed for optimal, tailored treatment of older patients with cancer. Therefore, Geriatric Assessment (GA) was introduced which allows for an initial assessment of the patient's condition, the identification of previously unknown health problems, a diagnosis of frailty, and an assessment of the likelihood of complications [1]. However, GA requires experience, it is time-consuming (although the additional 40 minutes during the preoperative assessment seems to be a small price to pay to decrease perioperative morbidity) and not necessary in all patients [2, 3]. Therefore, various screening tools for frailty have been developed. The Vulnerable Elderly Survey (VES-13) [4], Triage Risk Screening Tool (TRST) [5], Geriatric 8 (G8) [6], Groningen Frailty Index (GFI) [7], abbreviated Comprehensive Geriatric Assessment (aCGA) [8], Rockwood [9], Balducci [10], and Fried [11] screening scores are commonly used. Table 1 presents the glossary of the above-mentioned tests, including

the number of questions, range and literature cut-off scores for a patient to be considered frail.

In 2015, an update on the International Society of Geriatric Oncology (SIOG) recommendations on the use of frailty screening tools was published [12]. In the review, the most common studied tools in older patients with cancer were the VES-13, the TRST and the G8. The highest results were observed for: G8 (median sensitivity and specificity was 77–92% and 39–75%, respectively), Balducci (94% and 50%) and TRST (91% and 47%). In our recently published paper, the G8 had the highest sensitivity and negative predictive value in frailty screening among patients with cancer undergoing high-risk abdominal surgery. In turn, the aCGA had the highest discriminatory ability in terms of frailty screening in this population [13].

Most of the mentioned screening tests (VES-13, TRST, GFI, Rockwood, Balducci, Fried criteria) were developed based on older general populations. Only the G8 and the aCGA were designed specifically for older oncology patients [4–11]. One of the most

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**Table I.** Glossary of the different screening tests used in the study

Test	Developed for	Number of items	range	Cut-off score*
VES-13 [4]	general older population	13	0–15	≥3
TRST [5]	older patients at ED	6	0–6	≥1
G8 [6]	oncology patients	8	0–17	≤14
GFI [7]	general older population	15	0–15	≥4
aCGA [8]	oncology patients	15	ADL: 3 IADL: 4 GDS: 4 MMS: 4	≥1 dependent ≥1 dependent ≥2 ≤6
Rockwood [9]	general older population	4	0–3	≥2
Balducci [10]	general older population	4	0–4	1
Fried score [11]	general older population	5	0–5	≥3

VES-13 – Vulnerable Elders Survey, TRST – Triage Risk Screening Tool, G8 – Geriatric 8, GFI – Groningen Frailty Index, aCGA – abbreviated Comprehensive Geriatric Assessment, ED – Emergency Department, \*Cut-off score for a patient to be considered frail

important characteristics of a screening tool is its ability to exclude the possibility of vulnerability, which is equivalent to a negative predictive value. Most of the papers regarding this topic present the G8 as a score meeting these conditions. In turn, its low specificity may result from the fact that it was not designed to specifically detect an abnormal GA. Thus, the aCGA, which does derive from the GA, may achieve the highest overall accuracy. The VES-13 and Fried criteria assess mainly functional status and do not identify impairments in other geriatric domains such as nutritional status, mood, or cognitive level. The TRST was designed for the screening of frailty in the emergency department but various authors have used it also in other settings [5].

To conclude, there is currently no single perfect frailty-screening tool; some scores are better for population-level, whereas others are best suited for clinical screening and preoperative assessment. Therefore, the choice of the score might relay on specific clinical conditions, the aim of the tool and department resources [14]. In the case of preoperative assessment of older patients with solid abdominal cancer, the G8 and the aCGA seems the most suitable [13].

The screening tests were not originally designed to predict the postoperative course, however, they are being increasingly studied as outcome predictors. Biganzoli et al. assessed patients with early-stage solid cancers using the Balducci, the Fried and the VES-13 score. The VES-13 score of ≥7 was a valuable discriminating tool for predicting functional decline or death. However, the authors used a higher cut-off level (≥7) in comparison to most publications (≥3) [15]. Bongue et al. evaluated the predictive performance of four frailty screening methods (aCGA, GFI, VES-13 and Fried score) and their AUC in predicting mortality ranged from 0.63 to 0.75. The tool with the greatest sensitivity for predicting the occurrence of disability, mortality and institutionalisation was the VES-13 [16]. In turn, Hall D et al. showed the clinical usefulness of the screening tool implemented in the preoperative decision process of 9153 patients undergoing various surgical procedures. On that basis, physicians decided to perform detailed evaluations of the pa-

tients and to modify their perioperative plans accordingly. As a result the mortality rate decreased significantly 30, 180 and 365 days after the surgery [17]. In turn, Huisman M.G. et al. analysing patients undergoing surgery for various solid tumours did not observe any significant predictive ability of the VES-13 and the GFI for the 30-day postoperative outcome [18].

Concluding, frailty-screening tools can be very beneficial in a variety of surgical fields. They can identify patients at risk of frailty and for adverse outcomes, particularly in situations of lack of experience in full GA (they are easy to master and implement), in acute admitted patients (when there is not enough time or some of the domains cannot be assessed) and in cases of low-/moderate-risk surgery (where extensive frailty evaluation may not influence the postoperative outcome). However, only a full Geriatric Assessment allows for: an appropriate preoperative evaluation (currently also the reference method for frailty diagnosis), identifying the age-related areas of vulnerability that can be missed in a routine clinical evaluation and enabling their preoperative modification. It also thoroughly supports the process of shared preoperative decision-making. In this age group the treatment goal is not only extension of life, but more importantly, a return to the preoperative functional and intellectual level in the postoperative period. Arguments raised about the time-consuming nature of this process are absurd, particularly when one considers the time and resources required to treat complications. Therefore, the use of the GA prior to high-risk surgery for all older patients with cancer should be recommended.

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