



Delphi consensus of an expert committee in oncogeriatrics regarding comprehensive geriatric assessment in seniors with cancer in Spain



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ABSTRACT

Objectives: The aim of this work was to reach a national consensus in Spain regarding the Comprehensive Geriatric Assessment (CGA) domains in older oncological patients and the CGA scales to be used as a foundation for widespread use.

Material and Methods: The Delphi method was implemented to attain consensus. Representatives of the panel were chosen from among the members of the Oncogeriatric Working Group of the Spanish Society of Medical Oncology (SEOM). Consensus was defined as $\geq 66.7\%$ coincidence in responses and by the stability of said coincidence (changes $\leq 15\%$ between rounds). The study was conducted between July and December 2016.

Results: Of the 17 people invited to participate, 16 agreed. The panel concluded by consensus that the following domains should be included in the CGA: (and the scales to evaluate them): functional (Barthel Index, Lawton-Brody scale, gait speed), cognitive (Pfeiffer questionnaire), nutritional (Mini Nutritional Assessment – MNA), psychological/mood (Yesavage scale), social-familial (Gijon scale), comorbidity (Charlson index), medications, and geriatric syndromes (urinary and/or fecal incontinence, low auditory and/or visual acuity, presence of falls, pressure sores, insomnia, and abuse). Also by consensus, the CGA should be administered to older patients with cancer for whom there is a subsequent therapeutic intent and who scored positive on a previous frailty-screening questionnaire.

Conclusion: After 3 rounds, consensus was reached regarding CGA domains to be used in older patients with cancer, the scales to be administered for each of these domains, as well as the timeline to be followed during consultation.

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1. Introduction

The Comprehensive Geriatric Assessment (CGA) is the main tool used to evaluate older patients, and its benefits are widely recognized [1,2]. In the field of geriatric oncology, the CGA has proven to inform more than other functional scales, such as the *Eastern Cooperative*

Oncology Group (ECOG) “performance status” (ECOG-PS) or the Karnofsky index (KI) [3]. The *National Comprehensive Cancer Network* (NCCN) guidelines recommend that the CGA be performed in patients with cancer ≥ 65 years of age [4]. The *International Society of Geriatric Oncology* (SIOG) also strongly recommends the CGA in this setting [5] and has emphasized the usefulness of frailty screening tests [6].

However, despite the recommendations advocating in favor of the CGA, how to implement it remains controversial. For example, there is no agreement regarding which patients it should be administered to, which scales are most appropriate for each domain evaluated (functional, nutritional, etc.), or which geriatric syndromes should be considered. Two previous publications have examined these issues – one in the

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United States [7] and another within the SIOG [8]. In both cases, consensus was attained. In the former [7], consensus was reached on the optimal assessment methods and interventions required for the most commonly used CGA domains after a four-round Delphi process. However, other aspects of the CGA, such as screening tools and cut-off age for assessment, presented a high degree of discrepancy. In the latter publication [8], consensus was arrived at regarding the cut-off age for assessment, mandatory CGA domains (function, physical performance, comorbidity/polypharmacy, cognition, nutrition, social support, and psychological status), and how the CGA can guide treatment decisions and nononcologic interventions. However, these studies offered inconsistent results in some areas; for instance, the definition of the population in which it should be used. Furthermore, the geriatric syndromes to be taken into account (falls, incontinence, etc.) were not mentioned.

The Oncogeriatric Working Group of the Spanish Society of Medical Oncology (SEOM) also sought consensus on the use of the CGA in the older patient with cancer. We have attempted to include these controversial topics in our analysis. Moreover, we believe that implementing the CGA in seniors with cancer should take into account the health, as well as the economic and social reality, of each country. It therefore seemed fundamental that this project be conducted in Spain. Our final goal was to establish a foundation for further research projects.

2. Material and Methods

A 3-round Delphi process was conducted between July and December 2016 with an expert committee to which members of the SEOM Oncogeriatric Working Group were designated to carry out the objectives set forth. The description of the methodology was as follows.

2.1. Definition of the Issue to Be Addressed

Two international manuscripts have recently been published that reveal the need to reach consensus regarding the tools to be used in the CGA in older patients with cancer, as well as the difficulty in doing so [7,8]. There is no national expert consensus in this regard, and the topic was posed at the first meeting of the SEOM Oncogeriatric Working Group (February 2016) with the aim of resolving this deficit.

2.2. Creation of the Steering Group and Expert Committee

At the second SEOM Oncogeriatric Working Group meeting (July 2016), once the problem (lack of consensus) had been identified, the composition of the Expert Committee was defined. Selection criteria for the panelists (Expert Committee) to participate in this project were: expertise, experience (at least two years of dedication to geriatric oncology), and publications and/or prestige in their field (funded or non-funded research projects). Following these parameters, an initial group of 11 experts was established; subsequently, another 6 professionals with renowned dedication to geriatric oncology were contacted via e-mail; all agreed to participate. A group of 17 experts was thereby formed, although only 16 went on to become the members of the definitive Expert Committee (Fig. 1).

2.3. Method Selection

Following the publication of the previous international manuscripts, the Expert Committee opted in favor of a Delphi process.

The Delphi method is a general method by which to approach agreement in an expert consensus committee, based on the analysis of and reflection on the issue to be addressed, for which the precise solution to which is unknown [9]. This method seeks to achieve a degree of consensus or agreement of the expert panelists regarding the proposed topic, instead of leaving the decision to each professional. It is an iterative process, in which participating experts answer a specifically drafted survey in several rounds which seeks to stabilize the group's opinions. Thanks to the sequence of rounds, each expert has the chance to reflect or reconsider their opinion in light of the group's general proposals. In addition, the information is managed anonymously and no member of the group knows how the other members have responded. Thus, the influence of dominating members is avoided, as well as the inhibition of certain participants.

2.4. Drafting of the Survey and Launching of the Questionnaires (Study Rounds)

The survey was drafted by two of the members of the Expert Committee, members of a Coordinating Subgroup. Their mission was to study and polish the working protocol, collaborate in selecting and

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Fig. 1. Expert committee.

recruiting experts, draft the questionnaires, encourage experts' participation, analyze the responses to the rounds, prepare the subsequent questionnaires, give appropriate feedback, supervise the progress of the entire process, interpret results, and, when necessary, propose and take corrective measures. The survey was then e-mailed to the rest of the group for their approval. After being unanimously approved, it was completed and e-mailed back to the members of the Expert Committee. The survey comprised two sections that referred to the CGA and frailty screening tools (Fig. 2); a third, additional section included demographic data.

This survey was sent to the entire Expert Committee in a first study round and, later, in a second round of the Delphi study, after an interval of at least 4 weeks.

Before beginning each round, the results obtained in the previous round were presented so that feedback could enable the information to be circulated among the experts and a common language to be

more easily established. Finally, the responses received on the survey underwent statistical analysis to quantify the group's decision and degree of consensus. After the second round, the survey questionnaires were refined and redefined, so as to facilitate consensus.

2.5. Definition of Consensus and Drafting of Results

The value to consider that a consensus had been reached was arbitrarily set at $\geq 66.7\%$ agreement in the group's opinion, i.e., concordance greater than two thirds of the members, as in prior geriatric oncology studies [7,8].

The stability of responses, i.e., the degree of persistence in the distribution of participants' opinions in both rounds, was considered to reflect consensus. In the literature, changes of less than 15% between two consecutive rounds have been deemed to indicate a high degree of stability [10]. In this study, stability was determined with respect to

Section One. To ascertain the CGA domains recommended by the Expert Committee and the scales to be used.

- 1) What dimensions do you consider fundamental in the initial assessment of older patients with cancer?
 - a. Functional: Yes/No.
 - b. Nutritional: Yes/No.
 - c. Cognitive: Yes/No.
 - d. Psychological/mood: Yes/No.
 - e. Use of medications: Yes/No.
 - f. Comorbidity: Yes/No.
 - g. Social-familial: Yes/No.
 - h. Geriatric syndromes: Yes/No.
 - i. Others.
- 2) Which scale do you consider best to evaluate functional status?
 - a. For ADL:
 - i. Barthel.
 - ii. Katz.
 - iii. Others (list/specify).
 - b. For IADL:
 - i. Lawton-Brody.
 - ii. Others (list/specify).
 - c. For physical function:
 - i. Gait speed.
 - ii. Get up and go test.
 - iii. Others (list/specify).
- 3) Which scale do you consider best to evaluate nutritional status?
 - a. Weight loss.
 - b. Body Mass Index.
 - c. MNA.
 - d. Others (list/specify).
- 4) Which scale do you consider best to evaluate cognitive status?
 - a. Pfeiffer.
 - b. MME.
 - c. Clock test.
 - d. Others (list/specify).
- 5) Which scale do you consider best to evaluate mood?
 - a. Yesavage.
 - b. Others (list/specify).
- 6) Which scale do you consider best to evaluate comorbidity?
 - a. Charlson.
 - b. CIS-G.
 - c. Others (list/specify).
- 7) Which scale do you consider best to evaluate social-familial status?

Fig. 2. Expert consensus survey (first and second rounds).

- a. Gijon.
 - b. OARS.
 - c. Others (list/specify).
- 8) Which geriatric syndromes do you believe should necessarily be included in any CGA?
- a. Constipation: Yes/No.
 - b. Insomnia: Yes/No.
 - c. Poor visual acuity: Yes/No.
 - d. Poor auditory acuity: Yes/No.
 - e. Falls: Yes/No.
 - f. Urinary incontinence: Yes/No.
 - g. Fecal incontinence: Yes/No.
 - h. Pressure sores: Yes/No.
 - i. Abuse: Yes/No.
 - j. Others (list/specify).

Section Two. To ascertain the relevance the Expert Committee gives to CGA and to frailty-screening questionnaires in our setting

- 1) What patients do you consider a CGA should be performed in?
- a. All seniors coming in to consult.
 - b. Only those in whom I am considering some kind of cancer treatment .
 - c. Only those to whom a frailty-screening questionnaire has previously been administered that indicates the need for CGA.
 - d. Only highly-comorbid seniors.
 - e. Other options.
- 2) What patients do you consider a frailty-screening questionnaire should be administered to?
- a. All seniors coming in to consult.
 - b. Only those in whom I am considering some kind of cancer treatment .
 - c. Only highly-comorbid seniors.
 - d. None.
 - e. Other options.

Fig. 2 (continued).

the opinion of the group as a whole, not to the stability of individual opinions.

2.6. Timing

The first round was completed in July 2016 and the second in November 2016. Between both rounds, a report was drafted with the quantitative data obtained until that point and sent to all the participating experts. Following the second round, the definitive results were issued, together with a report showing the degree of agreement in participants' responses. Given that there was no stability or consensus on certain items of the survey (those contemplated in the second section, which will be reported further on), a third round was undertaken and a new survey was created that specifically collected those items for which consensus had not been attained (Fig. 3). This last round was performed in December 2016.

2.7. Drafting of the Consensus

In this project, data were anonymously collected using an Excel sheet and subsequently analyzed.

Once the results from the different rounds were available, the definitive consensus was prepared. The communication of results included: a description of the study (objectives, method, and questionnaires), characteristics of the Expert Committee, how the experts' responses evolved over the course of the different rounds, majority opinions, level of consensus reached, and significant non-majority positions.

2.8. Contact With the Spanish Society of Geriatrics and Gerontology (SEGG)

Once the manuscript had been written and adopted by the members of the Expert Committee, it was presented to a group of 4 specialists in Geriatrics, belonging to the SEGG, so that they could give their opinion of the document.

3. Results

3.1. Demographic Data

The Expert Committee consisted of sixteen members, most of them female and specialists in Medical Oncology. Twelve had participated in non-funded research projects and only six had participated in funded projects (Table 1). Seven panelists were from the Community of Catalonia, two from Madrid, another two from the Community of Valencia, and one each from Galicia, Andalusia, Extremadura, Canary Islands, and Castilla-La Mancha (Fig. 1).

3.2. First and Second Rounds

Both rounds were completed by all the experts (sixteen in total) from three specialties: Medical Oncology (n = 13), Geriatrics (n = 1), and Internal Medicine (n = 2). In the first section of the first round (referring to the dimensions to be analyzed in a CGA and the best scales to assess them), 100% of the participants considered that the core dimensions that a CGA should include are function, nutrition, cognitive status, use of medications, and social-familial information. Psychological status

- 1) In an IDEAL context, what do you think the timeline should be for evaluating older patients with cancer?
 - a. No timeline. Only the screening questionnaire should be administered.
 - b. No timeline. Only the CGA should be administered.
 - c. First the screening questionnaire and then CGA in all patients.
 - d. First the screening questionnaire and then CGA only in those patients in whom some kind of treatment is intended.
- 2) In your DAILY practice, what do you think the timeline should be for evaluating older patients with cancer?
 - a. No timeline. Only the screening questionnaire should be administered.
 - b. No timeline. Only the CGA should be administered.
 - c. First the screening questionnaire and then CGA in all patients.
 - d. First the screening questionnaire and then CGA, only in those patients in whom some kind of treatment is intended.
- 3) In an IDEAL context in which you had enough time and the necessary infrastructure (specialized help, intense collaboration...), what elderly patients do you consider a CGA should be performed in?
 - a. None.
 - b. All.
 - c. It would depend on the result of the screening questionnaire.
 - d. It would depend on the result of the screening questionnaire and on the subsequent intention to administer some kind of treatment.
- 4) En your DAILY clinical practice, what elderly patients do you consider a CGA should be performed in?
 - a. None.
 - b. All.
 - c. It depends on the result of the screening questionnaire.
 - d. It depends on the result of the screening questionnaire and on the subsequent intention to administer some kind of treatment.

Fig. 3. Questionnaire used in the third round.

and geriatric syndromes were agreed upon as being useful by 87.5% of the panelists (Table 2).

In the second round of this first section, 100% of the members agreed as to the need to include all of these CGA dimensions.

Table 2 presents the comparison of the results, concordance, and stability between rounds, as well as the final consensus decision of both rounds. Of note is the fact that a consensus was not reached as to the scale best suited to evaluate nutritional status and cognitive status in the first round; however, consensus was attained in the second round.

Taking into account this information, and the concordance and stability of the experts' opinions in both rounds, the final consensus was that the following dimensions must be included in a CGA: function, nutrition, cognitive status, psychological status, use of medications, social-familial status, and geriatric syndromes. The scales/tests recommended to evaluate these dimensions are: the Barthel Scale for ADL, Lawton-Brody for IADL, and gait speed for functional evaluation; the MNA for

nutritional status, the Pfeiffer Questionnaire for cognitive status, the Yesavage Scale for emotional evaluation, the Charlson Index for comorbidity, and the Gijon Social-Familial Scale for social situation. The recommended geriatric syndromes that should be included are: insomnia, poor visual acuity, poor auditory acuity, fecal incontinence, urinary incontinence, and abuse. No consensus was reached with respect to the use of two geriatric syndromes, pressure sores and constipation.

In the first round, regarding the second section of the survey, no consensus was attained in any of the aspects evaluated. On the one hand, agreement was not achieved about who a CGA should be administered to, with 37.5% of the experts indicating that it should be administered to all older individuals with a diagnosis of cancer coming into the clinic and another 37.5% of the opinion that it should only be used in those who have a positive result on frailty screening. Almost 19% (18.8%) of the experts considered that a CGA should only be administered to those to whom some form of treatment is going to be offered. Similarly,

Table 1
Characteristics of the Expert Committee members.

Variable	Results
Age	Median: 45.5 yr.; Mean: 45.6 yr. Range: [34–57]
Gender	Female: 13 (81.3%) Male: 3 (18.8)
Specialty	Medical oncology: 13 (81.3%) Internal medicine: 2 (12.5%) Geriatrics: 1 (6.3%)
Years in Geriatric Oncology	Median: 8 yr.; Mean: 8.2 yr. Range: [2–20]
Non-funded geriatric oncology projects	No: 4 Yes: 12 (4 people, two projects; 4 people, three projects; 4 people, four projects) Median: 1.5. Mean: 1.5 Range: [0–4]
Funded geriatric oncology projects	No: 10 Yes: 6 (5 people, one project; 1 person, two projects) Median: 0; Mean: 0.4 Range: [0–2]

(yr: years).

the use of frailty screening tools was another issue for which there was no consensus. In the opinion of 43.8% of the experts, these instruments should only be used in those to whom some form of treatment is going

Table 2
Final results of rounds 1 and 2. Concordance and stability.

		First round. % of agreement	Second round. % of agreement	First round. Is concordance met?	Second round. Is concordance met?	Stability. Is stability met?	Final consensus result
Basic dimensions	Functional	100%	100%	Yes	Yes	Yes	CGA should include all these dimensions
	Nutritional	100%	100%	Yes	Yes	Yes	
	Cognitive	100%	100%	Yes	Yes	Yes	
	Psychological	87.5%	100%	Yes	Yes	Yes	
	Use of medications	100%	100%	Yes	Yes	Yes	
	Social-familial	100%	100%	Yes	Yes	Yes	
	Geriatric syndromes	87.5%	100%	Yes	Yes	Yes	
Function	ADL Barthel	94%	100%	Yes	Yes	Yes	Barthel Lawton-brody gait speed
	Katz	6%					
	IADL Lawton-Brody	100%	100%	Yes	Yes	Yes	
	Others	0%	0%				
	Others Gait speed	69%	68.8%	Yes	Yes	Yes	
Nutrition	GUGT	69%	43.8%	Yes	No		MNA
	↓ weight	31%	56.3%	No	No	NA	
	BMI	19%	12.5%	No	No		
	MNA	56%	68.8%	No	Yes		
	Others	12%					
Cognitive	Pfeiffer	56%	75%	No	Yes	NA	PFEIFFER
	MMSE	44%	37.5%	No	No		
Emotional	Yesavage	75%	100%	Yes	Yes	Yes	YESAVAGE
	GDS	13%					
	HADS	6%					
	Others	4.5%					
Comorbidity	Charlson	69%	81.3%	Yes	Yes	Yes	CHARLSON
	CIRS-G	38%	18.8%	No	No		
	ACE-27	3.5%	6.3%	No	No		
Social-familial	Gijon	81%	100%	Yes	Yes	Yes	GIJON
	OARS	19%		No	No		
	Others		12.5%	No	No		
Geriatric syndromes	Constipation	56%	62.5%	No	No		Insomnia poor visual/auditory acuity fecal/urinary incontinence abuse
	Insomnia	63%	75%	No	Yes		
	↓ visual acuity	69%	87.5%	Yes	Yes	Yes	
	↓ auditory acuity	75%	87.5%	Yes	Yes	Yes	
	Falls	100%	100%	Yes	Yes	Yes	
	Urinary incontinence	75%	87.5%	Yes	Yes	Yes	
	Fecal incontinence	94%	87.5%	Yes	Yes	Yes	
	Pressure sores	56%	87.5%	No	No		
	Abuse	69%	87.5%	Yes	Yes	Yes	

Note: Regarding the criterion of a difference of <15% between the first and second rounds, it is only applicable to those questions for which there was a consensus in both rounds. This difference refers to the percentage of concordance not having decreased by ≥15% in the second round versus the first, despite consensus having been reached in both.

(ADL: Activities of Daily Life; IADL: Instrumental Activities of Daily Life; MNA: Mini Nutritional Assessment; BMI: Body Mass Index; MMSE: Mini Mental State Examination; GUGT: Get Up and Go Test; GDS: Geriatric Depression Scale; HADS: Hospital Anxiety and Depression Scale; CIRS-G: Cumulative illness Rating Scale for Geriatrics; ACE-27: Adult Comorbidity Evaluation-27; OARS: Older Americans Resource and Services Group)

to be offered, whereas 37.5% of the experts consider that they should be used in all [seniors] coming into the clinic. For 18.8%, the frailty-screening questionnaire is meaningless in the setting of geriatric oncology care.

In the second round, addressing the second section of the survey, the experts continued to fail to reach a consensus on any of the aspects evaluated; thus, agreement was not reached concerning which older patients with cancer should undergo the CGA, with 37.5% of the experts indicating that it should be administered to everyone with a positive frailty screening; 43.8% believed that it should be performed only in those who are going to receive treatment, and one fourth, felt that it should be given to everyone who comes to consult. Additionally, the lack of consensus persisted as to the use of frailty screening tools. Half of the panelists considered that these tools should only be used in those to whom some form of treatment is going to be offered and 31.3% of the experts believed it should be applied to everyone coming in to consult. For 18.8%, the frailty-screening questionnaire is meaningless in the context of caring for older patients with cancer.

3.3. Third Round

In light of the lack of consensus for these aspects, a third round was planned, reformulating the questions, classifying responses on the basis of two different contexts (ideal and daily practice), and focusing on

information regarding the timeline to be followed in the clinic when dealing with older patients with cancer. This third round was completed by 87.5% of the members of the panel (n = 14).

The questions for this round are reflected in Fig. 3 and the results can be found in Table 3. To summarize and as a final consensus statement, the Expert Committee found that in everyday practice, a screening test should be administered prior to CGA, but only to patients who are going to undergo active treatment. The CGA should be performed only in patients with a previous positive screening test and solely if they are going to be treated.

3.4. Contributions from the SEGG

After reading the consensus statement, the specialists in Geriatrics indicated the *Short Physical Performance Battery* (SPPB) or Guralnik test as being important in evaluating functional status [11]. For cognitive assessment, they pointed to the use of Folstein's Mini-Mental State Examination [12] or the Spanish adaptation by Lobo. They also emphasized the transcendence of certain geriatric syndromes, such as anxiety or depression, delirium, constipation, frailty, sarcopenia, and immobility.

4. Discussion

At present, the Comprehensive Geriatric Assessment (CGA) is not a widespread practice among Medical Oncology specialists caring for seniors with cancer. One of the possible reasons is that there is no national consensus as to a fitting CGA model, as well as the time it takes to perform it. This Delphi study sought to reach a consensus, starting with an Expert Committee of the SEOM Oncogeriatric Working Group. This is the first work to analyze this issue at a national level.

The validity of the content of a Delphi consensus will depend on the appropriate choice of members of the panel of experts [13]. The SEOM Oncogeriatric group therefore paid special attention to this aspect. Seventeen possible candidates were chosen (requirements: ≥ 2 years dedication to geriatric oncology; participation in projects related to geriatric oncology; membership in the SEOM Oncogeriatric Working Group), and 16 of them agreed to participate. The members of the panel had long careers in geriatric oncology (Table 2).

Panelists represented multiple geographical locations in Spain (Fig. 1). This geographic dispersion justifies the use of the Delphi method to reach consensus [14]. It was also diverse in terms of speciality, given that, although there was a predominance of medical oncologists, specialists in Internal Medicine and Geriatrics also comprised the group. This variability enhances the final results.

The level of participation was high: in the first two rounds, all of the panelists participated (n = 16) and in the third round, only two were lost, resulting in 14 experts; i.e., 87.5% of the initial panel. This high participation rate supports the study's validity, as well as the final outcomes [15]. Recommendations indicate that the panel of experts should consist

of a minimum of 7 and maximum of 30 [14]; hence, the composition of our Expert Committee is deemed appropriate.

In previous international consensus in geriatric oncology, Likert-type scales were used, i.e., summary scales [7,8]. In contrast and to avoid the main disadvantage of this kind of survey (two people can have the same score resulting from different choices), we chose to use open-response questions (Figs. 2 and 3); consequently, consensus was not based on the interquartile range values, but on the presence of a minimum of 66.7% concordance in the experts' responses [9]. This concordance criterion was also applied in the recent study conducted by Mohile et al., focusing on geriatric oncology [7].

In the survey used in the two first rounds, the domains to be used in CGA and the scales to assess each of these domains were appraised, as were the indications for CGA and frailty screening tools. In the third round, only this last aspect was highlighted, meaning that a consensus had already been achieved in the two first rounds of the study with respect to the indication for CGA and screening tools, as well as the timeline for their administration. More questions could have been posed, but the panel felt that the survey was adequate and asking more questions would have prolonged each round, and, consequently, the study. In subsequent analyses, any number of aspects could have been explored about which a national consensus should be attained in the field of geriatric oncology, such as the selection of intervention maneuvers, recommendation of a specific screening questionnaire, or decision-making based on CGA findings. Our study lacks such information, unlike the international study by Mohile et al. [7].

After two rounds, consensus was obtained regarding the dimensions to include in a CGA and the scales to be used to assess function, emotional, comorbidity, social-familial, nutritional, cognitive, and geriatric syndrome domains. To date, several articles about CGA in geriatric oncology have explored different domains, without achieving unanimity [5,16,17]. Therefore, the survey used in our study sought to achieve a national consensus with respect to CGA dimensions, which establishes a starting point for further studies. Already in the first round (and the results remained stable in the second round), there was unanimity about the domains that any CGA should include when dealing with seniors with cancer: functional, nutritional, cognitive, mood, medications, comorbidity, social-familial, and geriatric syndromes. Moreover, in the second round, there was 100% agreement for each of these dimensions. In O'Donovan et al.'s international consensus, all these dimensions were also the object of consensus, except for polypharmacy [8]. In the manuscript by Mohile et al., consensus was reached for all of them [7]; however, the scales selected as being ideal for each domain sometimes differed from those chosen in our national consensus. Thus, for instance, the MMSE questionnaire was chosen to evaluate cognitive status and weight loss was selected to appraise nutritional status in the previously referenced article, whereas our expert panel chose the Pfeiffer questionnaire and the MNA, respectively [7]. All the instruments chosen in our consensus have been included in international publications [16,17], with the exception of the Gijon social-familial scale, which is a national questionnaire that has also been used in other Spanish projects [18].

Table 3
Results of the third round.

	Possible answers	Everyday context	Ideal context	Was a consensus reached?	Third-round conclusion
Timeline	None. Only the screening questionnaire	0	0	Only in everyday context; not in an ideal context	In everyday practice, a screening questionnaire should be administered first and then CGA, but only when patients are going to be treated
	None. Only CGA	14.3%	28.6%		
	First screening questionnaire and then CGA in all patients	0	42.8%		
	First screening questionnaire and then CGA only when there is therapeutic intent	85.7%	28.6%		
Candidates for CGA	None	0	0	Only in everyday context; not in an ideal context	In everyday practice, CGA is indicated in patients who are going to be treated and who have a positive screening questionnaire
	All seniors	14.3%	57.1%		
	Depending on screening questionnaire, all patients	7.1%	14.3%		
	Depending on screening questionnaire, only if there is therapeutic intent	78.6%	28.6%		

(CGA: Comprehensive Geriatric Assessment).

Table 4
Comparison between several experts' consensus in oncogeriatrics.

Domain		Spanish consensus	Mohile's consensus [7]	O'Donovan's consensus [8]
Function	ADL	Barthel Scale	ADL*	ADL*
	IADL	Lawton-Brody Index	IADL*	IADL*
	Others	Gait speed	Gait speed GUGT	GUGT
Nutrition		MNA	Weight loss	MNA
Cognition		Pfeiffer questionnaire	MMSE	MMSE
Emotional status		Yesavage	GDS	GDS (for anxiety, patient history/interview)
Comorbidity		Charlson	CIRS-G	Charlson
Social-familial		Gijon Social-Familial Scale	Caregiver burden/Support	Patient history/Caregiver interview
Polypharmacy		List of medications	List of medications	No consensus
Geriatric syndromes		Insomnia	Not evaluated	Not evaluated
		Poor visual acuity		
		Poor auditory acuity		
		Urinary incontinence		
		Fecal incontinence		
		Pressure sores		
		Abuse		

Note: * The authors have not specified which scale is recommended to evaluate ADL or IADL, but there is consensus about the use of ADL and IADL in older patients with cancer. (ADL: Activities of Daily Life; IADL: Instrumental Activities of Daily Life; MNA: Mini Nutritional Assessment; MMSE: Mini Mental State Examination; GUGT: Get Up and Go Test; GDS: Geriatric Depression Scale; CIRS-G: Cumulative Illness Rating Scale for Geriatrics).

Comparison between consensus on domains and scales to be used in older patients with cancer is shown in Table 4.

With this consensus, the doubt surrounding the suitability of choosing older patients or not based on frailty screening has also been addressed. Most of our experts (78.6%) feel that the CGA should only be applied to older patients for whom subsequent treatment is intended and in whom the frailty-screening questionnaire has revealed the need to do so. In this regard, we must clarify and analyze how to proceed with those older patients with cancer for whom there is no therapeutic intent and which would be the optimal frailty-screening tool in these cases. Two of the experts felt that the CGA should be performed in all older patients with cancer who come into the clinic, thereby defeating the usefulness of screening questionnaires and delaying the issue of intention to treat.

There is no ideal number of iterations in a Delphi study, although four is generally the maximum [19]. O'Donovan et al. conducted 4 rounds in their study [8]. As in our study, Mohile et al. needed only three [7]. In our project, having reached a consensus regarding CGA domains and the various scales to be used in the first two rounds, a third round was needed that also achieved a consensus as to when CGA and frailty-screening are indicated, although only in the context of everyday practice and not in an ideal setting. A fourth round was not undertaken for two reasons: first, because it had not been foreseen and second, because with the consensus reached with respect to the "day-to-day" setting, it is irrelevant to seek consensus in an "ideal world".

Nonetheless, this document also has a series of limitations. For one, a significant portion of our Expert Committee (7 in total, 43.8%) belonged to the catchment area of Catalonia (Fig. 1); consequently, the results could reflect a bias in favor of the standard practice in that area.

Furthermore, only one specialist in Geriatrics was included in the group, and this may have caused the vision of the consensus to be more eminently oncological. For this reason, a group of specialists in Geriatrics, representing the Spanish Society of Geriatrics and Gerontology (SEGG) suggested the use of the *Short Physical Performance Battery* (SPPB) or Guralnik's test [11] as key instruments, having been designated the tool of choice in the Ministry of Health's strategy for the detection of frailty and fall prevention; it has also been adopted by the Interterritorial Council to be used in Primary Care. Likewise, they recommended Folstein's Mini-Mental State Examination to evaluate cognitive function [12] or Lobo's adaptation to Spanish, more suitable to detect and monitor dementia (although the Pfeiffer questionnaire, the evaluation tool chosen in this consensus, is more discriminating in screening and in

cases of mild cognitive impairment). However, Folstein's MMSE was copyrighted in 2011 and users of this scale must pay a fee to use it. Insofar as geriatric syndromes are concerned, the presence of anxiety or depression, delirium, constipation, or immobility were not chosen to be part of the final consensus, although in the field of Geriatrics, they are highly relevant. Certain geriatric syndromes were not contemplated in the initial survey, such as dementia, delirium, or malnutrition, which can be highly relevant when making treatment decisions in this population. Additionally, two well-known syndromes in Geriatrics, albeit currently less well-defined in geriatric oncology, frailty and sarcopenia [20–22], could play a major role in the future. All this can contribute to complement the information in the final consensus. This is not a component of the final consensus, as it was not a final decision of the designed Expert Committee. Nevertheless, this information enhances the ability of physicians focused on cancer in the elderly to evaluate their patients.

Another potential limitation of this study is that it does not include a round in which the experts could debate their responses face-to-face, although it is also true that in vis-à-vis meetings, there can be a dominant opinion or a leader whose opinion sways that of the other members [19].

Despite the extremely high participation (100% in the two first rounds), it must be remembered that two of the experts did not participate in the third round (87.5%). In this final wave, a consensus was not reached about the "ideal setting", but the responses of the two panelists that did not complete it could have modified this situation. Nonetheless, in the "everyday context", the participation of those two experts would not have jeopardized the final conclusion, given that consensus had been reached with an ample margin with respect to the other possible options.

Finally, we must not lose sight of the fact that decision-making in geriatric oncology is an onerous process and that such complexity cannot be collected nor reflected in a study of these characteristics. More complex studies would be needed that focus more directly on decision-making.

Author Contributions

Maria-José Molina-Garrido: manuscript preparation, design and methods, data collection and management, and manuscript review; Carmen Guillén-Ponce, Remei Blanco, Juana Saldaña, Jaime Feliú, Maite Antonio, Rosa López-Mongil, Primitivo Ramos Cordero, Regina Gironés: manuscript preparation and manuscript review.

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References

- [1] Stuck AE, Siu AL, Wieland GD, Adams J, Rubenstein LZ. Comprehensive geriatric assessment: a meta-analysis of controlled trials. *Lancet* 1993;342(8878):1032–6.
- [2] Stuck AE, Aronow HY, Steiner A, Alessi CA, Bula CJ, Gold MN, et al. A trial of annual in-home comprehensive geriatric assessments for elderly people living in the community. *N Engl J Med* 1995;333:1184–9.
- [3] Extermann M, Hurria A. Comprehensive geriatric assessment for older patients with cancer. *J Clin Oncol* 2007;25:1824–31.
- [4] Hurria A, Mohile SG, Dale W. Research priorities in geriatric oncology: addressing the needs of an aging population. *J Natl Compr Cancer Netw* 2012;10:286–8.
- [5] Wildiers H, Heeren P, Puts M, Topinkova E, Janssen-Heijnen ML, Extermann M, et al. International society of geriatric oncology consensus on geriatric assessment in older patients with cancer. *J Clin Oncol* 2014;32:2595–603.
- [6] Decoster L, Van Puyvelde K, Mohile S, Wedding U, Basso U, et al. Screening tools for multidimensional health problems warranting a geriatric assessment in older cancer patients: an update on SIOG recommendations. *Ann Oncol* 2015;26(2):288–300.
- [7] Mohile SG, Velarde C, Hurria A, Magnuson A, Lowenstein L, Pandya C, et al. Geriatric assessment-guided care processes for older adults: a Delphi consensus of geriatric oncology experts. *J Natl Compr Cancer Netw* 2015;13:1120–30.
- [8] O'Donovan A, Mohile SG, Leech M. Expert consensus panel guidelines on geriatric assessment in oncology. *Eur J Cancer Care* 2015;24:574–89.
- [9] Diamond IR, Grant RC, Feldman BM, Pencharz PB, Ling SC, Moore M, et al. Defining consensus: a systematic review recommends methodological criteria for reporting of Delphi studies. *J Clin Epidemiol* 2014;67:401–9.
- [10] Dajani JS, Sincoff MZ, Talley WK. Stability and agreement criteria for the termination of Delphi studies. *Technol Forecast Soc Chang* 1979;13:83–90.
- [11] Guralnik JM, Simonsick EM, Ferrucci L, Glynn RJ, Berkman LF, Blazer DG, et al. A short physical performance battery assessing lower extremity function: association with self-reported disability and prediction of mortality and nursing home admission. *J Gerontol* 1994;49:M85–94.
- [12] Folstein MF, Folstein SE, PR McHugh, Fanjiang G. MMSE. Mini-mental state examination. User's guide. *Psychological Assessment Resources*; 2001.
- [13] Goodman CM. The Delphi technique: a critique. *J Adv Nurs* 1987;12:729–34.
- [14] Varela-Ruiz M, Díaz-Bravo L, García-Durán R. Descripción y usos del método Delphi en investigaciones del área de la salud. *Inv Ed Med* 2012;1:90–5.
- [15] Hasson F, Keeney S, McKenna H. Research guidelines for the Delphi survey technique. *J Adv Nurs* 2000;32:1008–15.
- [16] Puts MT, Hardt J, Monette J, Girre V, Springall E, Alibhai SM. Use of geriatric assessment for older adults in the oncology setting: a systematic review. *J Natl Cancer Inst* 2012;104:1133–63.
- [17] Puts MT, Santos B, Hardt J, Monette J, Girre V, Atenafu EG, et al. An update on a systematic review of the use of geriatric assessment for older adults in oncology. *Ann Oncol* 2014;25:307–15.
- [18] Molina-Garrido MJ, Guillén-Ponce C. Development of a cancer-specific comprehensive geriatric assessment in a University Hospital in Spain. *Crit Rev Oncol Hematol* 2011;77:148–61.
- [19] Boulkedid R, Abdoul H, Loustau M, Sibony O, Alberti C. Using a reporting the Delphi method for selecting health care quality indicators: a systematic review. *PLoS One* 2011;6:e20476.
- [20] Ferrat E, Paillaud E, Caillet P, Laurent M, Tournigand C, Lagrange JLD, et al. Performance of four frailty classifications in older patients with cancer: prospective elderly cancer patients cohort study. *J Clin Oncol Jan* 2017;17:JCO2016693143. <https://doi.org/10.1200/JCO.2016.69.3143> [Epub ahead of print].
- [21] Paireder M, Asari R, Kristo I, Rieder E, Tamandl D, Ba-Ssalamah A, et al. Impact of sarcopenia on outcome in patients with esophageal resection following neoadjuvant chemotherapy for esophageal cancer. *Eur J Surg Oncol* 2017;43:478–84.
- [22] Molina Garrido MJ, Guillén Ponce C, Fernández Félix BM, Muñoz Sánchez MD, Soriano Rodríguez MD, Olaverri Hernández A, et al. Detection and evaluation of the role of sarcopenia in elderly patients with cancer treated with chemotherapy. ONCOSARCO project. *Rev Esp Geriatr Gerontol* 2017;52(3):146–51.