Quoi de neuf en onco-gériatrie ?

Actualités 2023

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Cost-Utility Analysis of Geriatric Assessment and Management in Older Adults With Cancer: Economic Evaluation Within 5C Trial

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Première étude cout-utilité à partir des données d'un essai randomisé concernant l'évaluation onco-gériatrique et le suivi

	Pourquoi la choisir ?	Quelle est l'expression du résultat ?
1. Analyse de minimisation des coûts (AMC)	Votre innovation n'a une influence que sur les coûts, les résultats sont identiques.	Coûts (A) – Coûts (B)
2. Analyse coût-efficacité (ACE)	Votre innovation a une influence sur les coûts et sur les résultats. Ces derniers sont mesurables quantitativement.	$$\frac{\text{Coûts (A) – Coûts (B)}}{\text{Résultat (A) – Résultat (B)}}$$ Les résultats peuvent, par exemple, être le nombre d'années de vie gagnées, le nombre d'hospitalisations évitées, le nombre d'erreurs de prescription médicamenteuse déjouées.
3. Analyse coût-utilité (ACU)	Votre innovation a une influence sur les coûts et sur les résultats. La qualité de vie liée à la santé est identifiée comme une conséquence importante de la mise en place de votre innovation	$$\frac{\text{Coûts (A) – Coûts (B)}}{\text{QALY (A) – QALY (B)}}$$ L'indicateur QALY correspond au nombre d'année de vie ajustée par la qualité. Des standards sont disponibles pour mesurer la qualité d'une année de vie : EQ-5D et HUI3
4. Analyse coût-bénéfice (ACB)	Votre innovation a une influence sur les coûts et sur les résultats. La quantification monétaire des résultats permet d'aider les décideurs à choisir entre deux stratégies. Cependant, l'attribution d'un coût à une vie est arbitraire et controversée tant sur le plan méthodologique qu'éthique. Cette méthode n'est donc pas conseillée.	[Coûts (A) – Coûts (B)] – [Bénéfice (A) – Bénéfice (B)]

Impact of Geriatric Assessment and Management on Quality of Life, Unplanned Hospitalizations, Toxicity, and Survival for Older Adults With Cancer: The Randomized 5C Trial

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- Essai randomisé canadien, multicentrique (8 centres) : 350 patients
- Plus de 70 ans avec cancer : 1$^{\text{ère}}$ ou 2è ligne de traitement, situation palliative ou curative, pas de dépistage de la fragilité
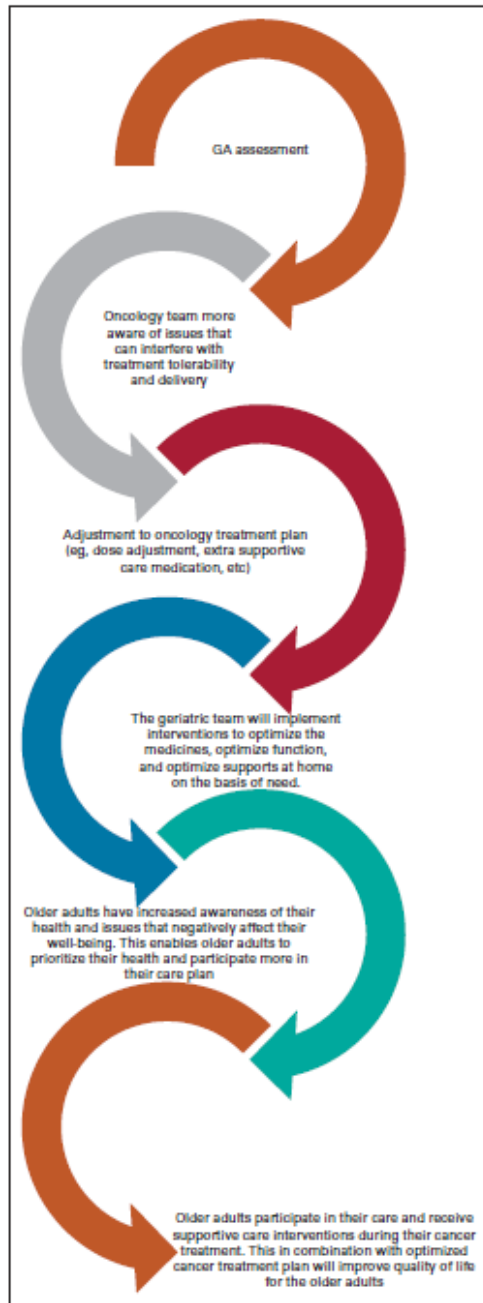
GA assessment

Oncology team more aware of issues that can interfere with treatment tolerability and delivery

Adjustment to oncology treatment plan (eg, dose adjustment, extra supportive care medication, etc)

The geriatric team will implement interventions to optimize the medicines, optimize function, and optimize supports at home on the basis of need.

Older adults have increased awareness of their health and issues that negatively affect their well-being. This enables older adults to prioritize their health and participate more in their care plan

Older adults participate in their care and receive supportive care interventions during their cancer treatment. This in combination with optimized cancer treatment plan will improve quality of life for the older adults

FIG 1. Study hypothesis. GA, geriatric assessment.

Screened for eligibility
(N = 4,792)

Excluded (n = 4,227)
 Not meeting inclusion (n = 3,732)
  criteria
 Other no return (n = 495)
  appointments or no
  treatment decision yet

Eligible
(n = 565)

Excluded (n = 187)
 Declined to participate, (n = 187)
  most common reasons
  for refusal included
  feeling too sick, too busy,
  and feeling too
  overwhelmed by recent
  cancer diagnosis

Random assignment
(n = 378)

Discovered ineligible (n = 28)
(screen failure)
 Receiving palliative (n = 8)
  care
 Other (n = 20)

Allocated to the intervention (n = 173)
 Received allocated intervention (n = 166)
 Did not receive allocated intervention (n = 7)
  Patient died before GA (n = 2)
  Patient withdrew from study before GA (n = 3)
  Patient refused GA (n = 1)
  Patient did not receive the intervention (n = 1)
   due to a miscommunication

Allocated to control (n = 177)

12-month follow-up (n = 173)
 Died (n = 39)
 Withdrew (n = 20)
 Completed the study (n = 114)

12-month follow-up (n = 177)
 Died (n = 42)
 Withdrew (n = 25)
 Completed the study (n = 110)

TABLE 2. Description of the Participants

Baseline Characteristic	Control Group (N = 177) % (unless otherwise indicated)	Intervention Group (N = 173) % (unless otherwise indicated)
Mean age, years (SD)	76.0 (5.1)	75.7 (4.7)
Female	39.8	41.0
Married/partnered	59.9	61.3
Living at home	97.2	97.1
Living alone	33.1	28.9
< 13 years of education	34.1	33.7
Cancer site		
Gastrointestinal	21.5	24.3
Breast	9.6	10.4
Genitourinary	23.2	19.1
Thoracic	24.3	23.7
Gynecologic	7.9	7.5
Lymphoma	9.6	9.3
Other	4	5.8
Curative/adjuvant intent	53.9	54.9
Treatment planned		
Cytotoxic	80.2	79.8
Immunotherapy	9.0	6.4
Targeted	7.9	11.0
None	2.8	2.9
G8 ≤ 14 (= frailty)	65.5	66.9
One or more other chronic health problems	67.8	66.3
Upfront dose reduced/undecided treatment	35.6	32.0
EORTC QLQ C30 global QOL mean score (SD)	67.7 (23.1)	65.0 (23.3)
1 or more IADL impairments	46.3	49.1
GA baseline[a]		
Comorbidity (N = 163)	NA	
High ≥ 4 points		17 (10.4)
Moderate 2-3 points		50 (30.7)
Falls risk (n = 163)	NA	48 (29.4)
Vulnerable social supports (n = 161)	NA	27 (16.8)
Nutrition malnourished or at risk (n = 162)	NA	64 (39.5)
Depressive symptoms (n = 162)	NA	17 (10.5)
Cognitive impairment (n = 158)	NA	23 (14.6)
Medication optimization (n = 164)	NA	107 (65.2%)
Median No. of prescription medications at baseline (n = 164)	NA	5 (Range 0-22)
CARG toxicity risk (n = 152)	NA	
Low		32 (21.1)
Medium		95 (62.5)
High		20 (13.2)
NA		5 (3.2)

Abbreviations: CARG toxicity risk, Cancer and Aging Research Group treatment toxicity risk score; EORTC QLQ C30, European Organisation of Research and Treatment of Cancer Quality of Life Questionnaire core version 30 items; GA, geriatric assessment; IADL, instrumental activities of daily living; QOL, quality of life; SD, standard deviation.

[a]The number of participants with a GA domain varies due to missing scores on certain tools because of location of the assessment, refusal, or other logistical reasons.
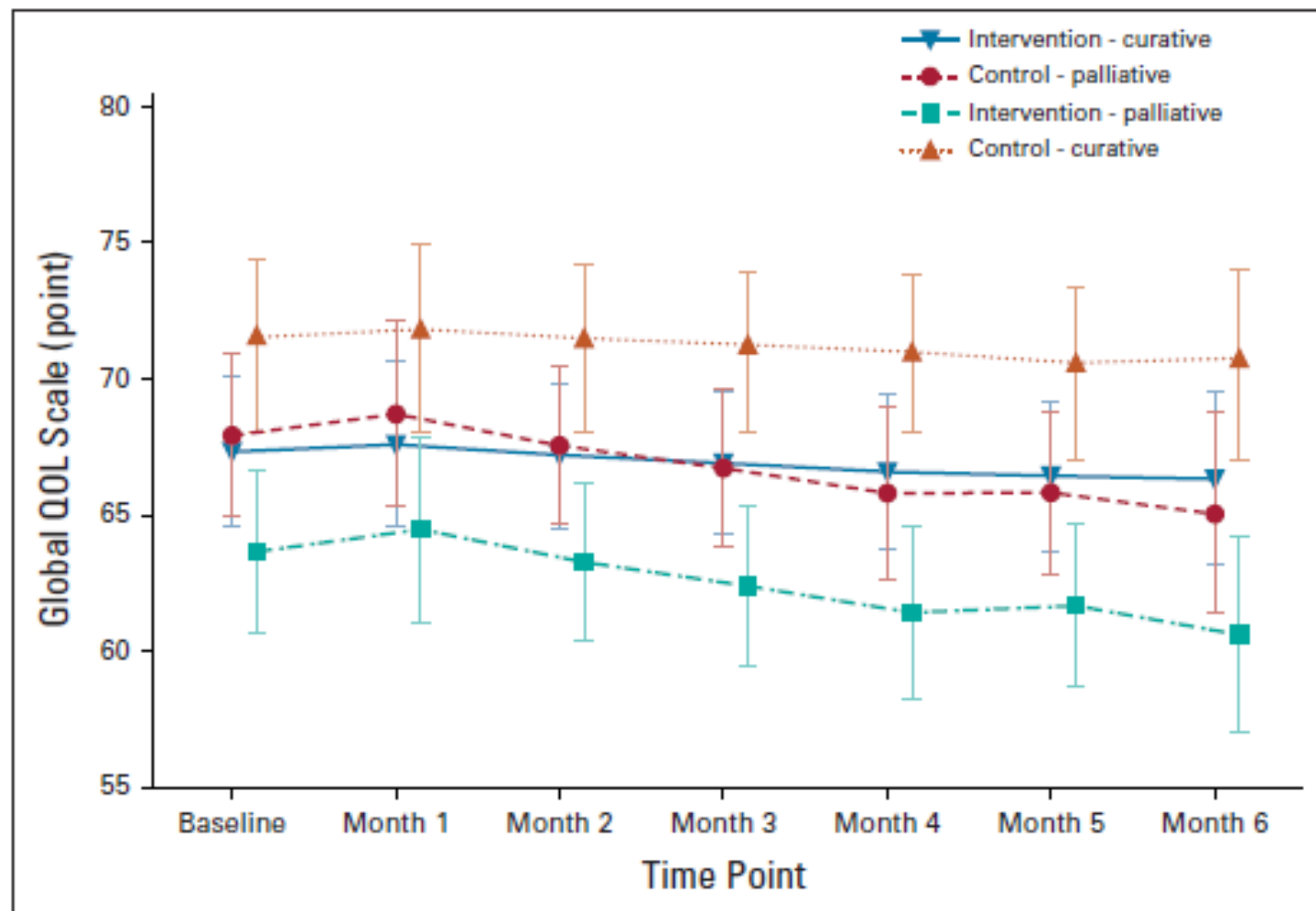
FIG 3. EORTC QLQ C30 global health subscale QOL over time. Model predicted QOL stratified by curative versus palliative on the basis of our latent growth curve modeling, no difference by treatment arm ($P > .05$). EORTC QLQ C30, European Organisation of Research and Treatment of Cancer Quality of Life Questionnaire core version 30 items; QOL, quality of life.

Cost-Utility Analysis of Geriatric Assessment and Management in Older Adults With Cancer: Economic Evaluation Within 5C Trial

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TABLE 2. Mean Costs by Resource Categories

Resource Category, Mean Cost (SD)	GAM (n = 173)	Usual Care (n = 177)	Incremental Cost	95% CI[a]
Intervention				
Geriatrician	214 (120)	0 (0)	214	194 to 231
Nurse, primary visit	41 (30)	0 (0)	41	36 to 45
Nurse, follow-up visits[b]	74 (54)	0 (0)	74	65 to 82
Hospitalizations	8,991 (13,304)	9,271 (13,318)	−280	−3,020 to 2,541
ED admissions	424 (560)	490 (632)	−66	−190 to 49
Diagnostic tests	714 (531)	746 (522)	−32	−143 to 82
Procedures[c]	153 (759)	312 (1,124)	−159	−359 to 32
Chemotherapy	21,476 (40,697)	20,038 (32,493)	1,438	−5,830 to 9,442
Radiation therapy	5,019 (7,561)	3,779 (6,087)	1,239	−191 to 2,682
Medical oncologist	544 (371)	583 (392)	−39	−118 to 43
Radiation oncologist	64 (140)	41 (95)	23	−1 to 50
Other physicians	621 (799)	424 (520)	197	51 to 345
Other health care specialists[d]	200 (423)	231 (620)	−31	−150 to 75
Out-of-province care	1 (14)	2 (16)	−1	−4 to 3
Total costs, health care payer perspective				
Before imputation	38,534 (42,486)	35,919 (34,328)	2,616	−5,290 to 10,896
After imputation	39,812 (41,856)	37,450 (34,062)	2,362	−5,483 to 10,495
Phone consultations	18 (32)	18 (37)	0	−8 to 7
OOP on medical equipment	170 (508)	649 (3,732)	−479	−1,102 to −16
OOP on medications	558 (1,495)	411 (731)	147	−74 to 415
OOP on transportation[e]	810 (1,649)	747 (1,281)	63	−240 to 392
Productivity loss: patient	851 (4,439)	862 (4,944)	−11	−981 to 975
Productivity loss: caregiver	3,524 (5,341)	3,361 (5,225)	163	−945 to 1,303
Paid and unpaid help	1,313 (4,761)	1,500 (5,834)	−187	−1,334 to 884
Total costs, societal perspective				
Before imputation	45,778 (44,698)	43,467 (37,748)	2,312	−5,924 to 11,390
After imputation	46,739 (43,818)	45,177 (37,355)	1,563	−6,583 to 10,403

NOTE. All costs (in 2021 CAD) were rounded to the nearest dollar.

Abbreviations: CAD, Canadian dollars; ED, emergency department; GAM, geriatric assessment and management; OOP, out-of-pocket; SD, standard deviation.

[a]CIs around the incremental costs represent bootstrapped values.

[b]Costs for all follow-up visits combined.

[c]Procedures include day surgeries and ambulatory visits.

[d]Other health care specialists include nurses, allied health professionals, etc.

[e]OOP costs were related to transportation, parking, and other expenses related to visits to health care facilities.
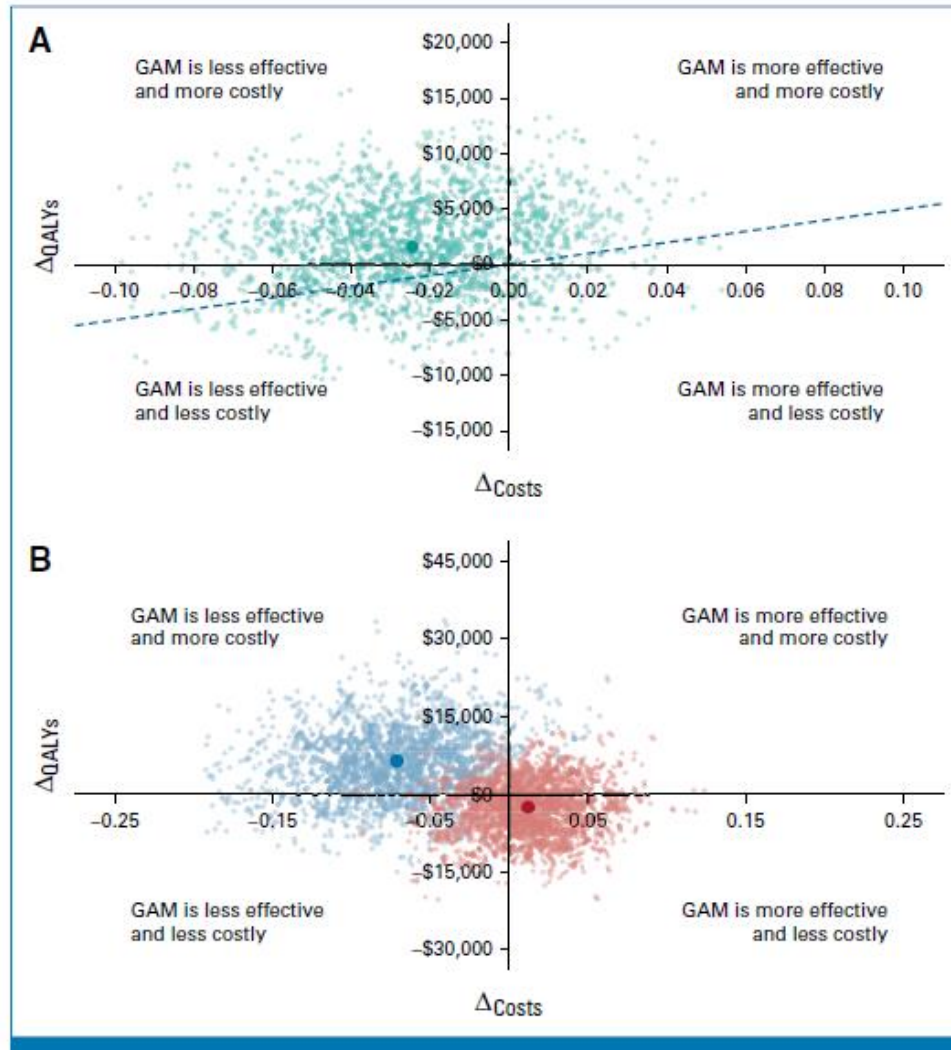
FIG 2. Cost-effectiveness plane for the (A) full sample and by (B) treatment intent. The graph shows difference in costs (y-axis) and difference in QALYs (x-axis) between GAM versus usual care for 20,000 bootstrap samples. Teal, blue, and red small dots represent bootstrap values for the full sample, for palliative treatment intent, and for curative treatment intent, respectively, while the bold circles of the same colors represent corresponding mean estimates. The blue dashed line represents the $50,000 per QALY threshold. Interventions are deemed cost-effective if they are below the cost-effectiveness thresholds. For example, for the full sample at $50,000 threshold, GAM is considered cost-effective in 25% of simulations compared with usual care (since 25% of bootstrapped samples [teal dots] are located below the $50,000 threshold line). GAM, geriatric assessment and management; ΔCosts, difference in costs; ΔQALYs, difference in quality-adjusted life-years.

Cost Utility of Geriatric Assessment in Cancer
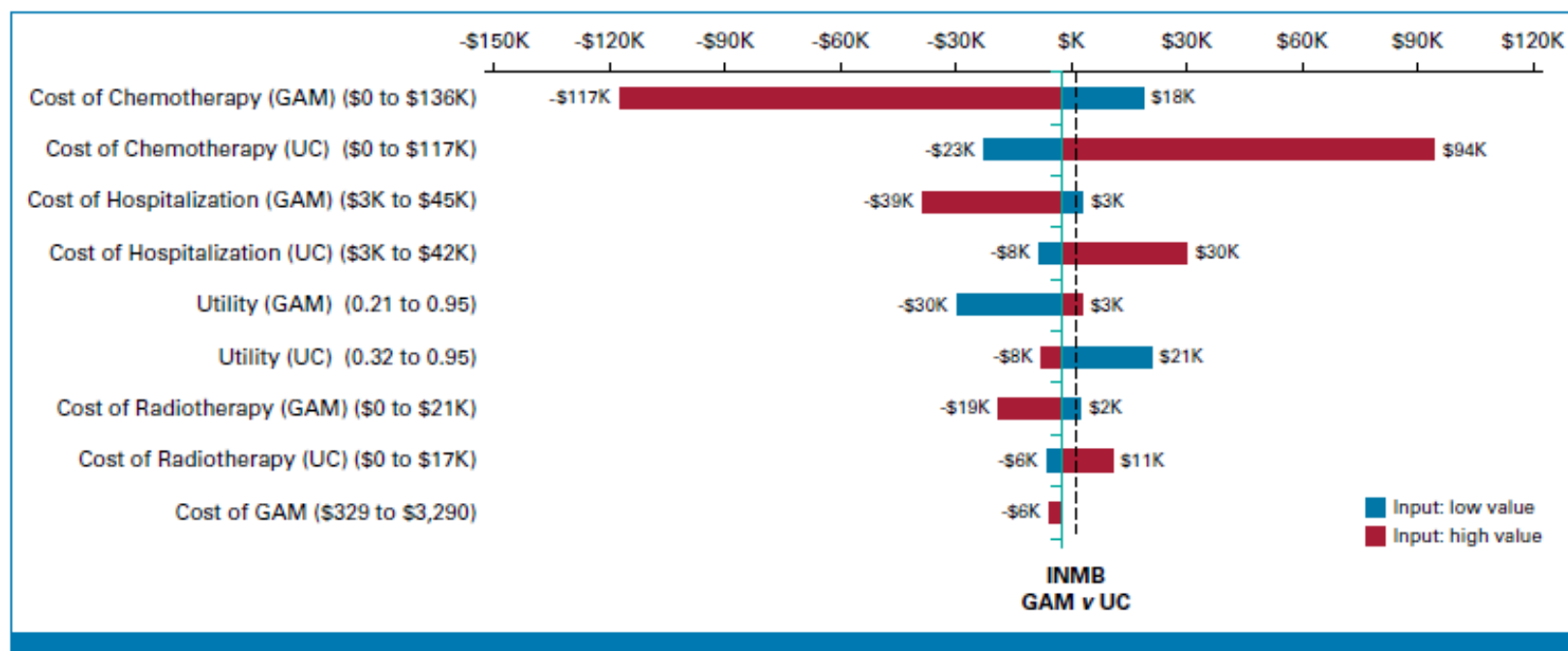
FIG 3. One-way sensitivity analysis. Parameters are listed in a descending order of their impact on the incremental INMB. The range of input values for each parameter is in parentheses and is based on 95% CIs. The black dashed vertical line corresponds to INMB of zero, while the teal axis represents the INMB from the base-case scenario (−$2,712). The bars and corresponding data labels indicate the INMB associated with maximum (red bars) and minimum (blue bars) inputs for each parameter (eg, as the cost of chemotherapy decreases for GAM arm, the INMB becomes more positive [the first bar] meaning that GAM is becoming a more attractive strategy compared with usual care). The values of the parameters when the bars are crossing zero (ie, when INMB becomes positive) are the thresholds at which the cost-effectiveness results are switching (eg, cost of hospitalization in GAM group needs to be $6,200 and less for GAM to become cost-effective, ie, for INMB to become >0). GAM, geriatric assessment and management; INMB, incremental net monetary benefit; K, thousands; UC, usual care.

Forces et faiblesses

- Analyse médico-économique très bien réalisée
- Inédit

- Basée sur un essai randomisé négatif avec difficultés de mise en œuvre du suivi, population très large non ciblée
- Résultats décevants par rapport à d'autres études : GAP70, GAIN

- Autres analyses médico-économiques
- Dont contexte européen, français
  - Evaluation médico-économique prévue dans PREPARE

Practical Assessment and Management of Vulnerabilities in Older Patients Receiving Systemic Cancer Therapy: ASCO Guideline Update

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TABLE 1. Complete List of Recommendations From 2018 ASCO Guideline and From the 2023 Guideline Update

Recommendation	Type; Evidence Quality; Strength of Recommendation
Recommendation 1.1. (Updated) All patients with cancer age 65 years and over with GA-identified impairments should have GAM included in their care plan. GAM includes using GA results to (1) inform cancer treatment decision-making and (2) address impairments through appropriate interventions, counseling, and/or referrals. **Amendment 1.1a.** This includes older adults receiving systemic therapy, including chemotherapy, targeted therapy, or immunotherapy	Type: Evidence based, benefits outweigh harms Evidence quality: High Strength of recommendation: Strong

Clinical impact and cost-saving analysis of a comprehensive pharmaceutical care intervention in older patients with cancer

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Admission ●━━━━━━━━━━━━━━━━━━━━━━━━━━━ ● **Discharge**

Preparation
✓ Assessment of patient information in EMR
✓ Preliminary Medication history

Patient admission interview
✓ Medication history
✓ Assessment of medication management at home and difficulties

Completion of Medication reconciliation
✓ Contact with community pharmacy (phone and secure messaging)
✓ Synthesis of BPMH
✓ Comparison of BPMH to admission prescription to identify discrepancies

Medication review
To identify additional DRPs

Recommendations to physicians
To correct medication errors and other DRPs

Pharmacist report
Integrated into the EMR

Discharge medication reconciliation
Comparison of BPMH to discharge prescription to identify discrepancies

Medication review
To identify additional DRPs on discharge medications

Recommendations to physicians
To correct medication errors and other DRPs

Patient discharge interview
Explanation of changes with a personalized medication chart

Pharmacist report
✓ Integrated into the EMR
✓ Sent to community pharmacy and general practitioner through secure messaging

FIGURE 1 The RECAP (phaRmaceutical care in Elderly CAncer Patients) intervention at admission and discharge of hospitalized patients. Abbreviations: BPMH : Best Possible Medication History; DRPs: Drug-Related Problems; EMR: Electronic Medical Record.

TABLE 1 Summary of baseline characteristics of patients eligible for a comprehensive pharmaceutical care intervention.

Patients' characteristics	N (%)
Age (n = 201)	
75–79	100 (50.2)
80–84	56 (27.9)
85 and more	45 (22.4)
Gender (n = 201)	
Men	117 (58.2)
Women	84 (41.8)

TABLE 1 (Continued)

Patients' characteristics	N (%)
Polypharmacy (n = 213[a])	
≥ 5 daily drugs	172 (80.8)
≥ 10 daily drugs	60 (28.2)
Medication managed at home (n = 197[b])	
By patient	119 (60.4)
By caregiver	43 (21.8)
By nurse	35 (17.8)

TABLE 2 Prevalence and rating for clinical significance of DRPs identified through pharmaceutical care at admission and discharge of hospitalized older patients with cancer.

	Admission N − 213	Discharge N − 107	p-value
Total number of DRPs			
Identified at baseline, N (%)	358 (100.0)	94 (100.0)	
After intervention, N (%)	113 (31.6)	19 (20.2)	0.031[a]
Mean number of DRPs per patient			
At baseline, mean ± SD	1.7 ± 1.8	0.9 ± 1.1	<0.01[b]
After intervention, mean ± SD	0.5 ± 0.9	0.2 ± 0.4	<0.01[b]
p-value	<0.01[b]	<0.01[b]	
Patients with ≥1 DRP			
At baseline, N (%)	151 (70.9)	51 (47.7)	<0.01[a]
After intervention, N (%)	73 (34.3)	16 (15.0)	<0.01[a]
p-value	<0.01[b]	<0.01[b]	
pADE scores of DRPs rated for clinical significance			
0 (no harm expected), N (%)	33 (17.3)	10 (17.2)	
0.01 (very low), N (%)	23 (12.0)	6 (10.3)	
0.1 (low), N (%)	57 (29.8)	15 (25.9)	
0.4 (medium), N (%)	58 (30.4)	22 (8.8)	
0.6 (high), N (%)	20 (10.5)	5 (8.6)	
Total	191 (100.0)	58 (100.0)	
Clinically significant DRPs (pADE >0)			
Total number of CS-DRP, N (% of all identified DRPs)	158 (44.1)	48 (51.1)	0.230[a]
Number of CS-DRPs per patient (mean ± SD)	0.7 ± 1.0	0.4 ± 0.8	0.007[b]
Patients with ≥1 CS-DRP, N (%)	95 (44.6)	30 (28.0)	0.053[a]

Abbreviations: CS-DRP, clinically significant DRPs; DRPs, drug-related problems; SD, standard deviation.

[a]Pearson Chi-square test.

[b]Mann–Whitney U test.

TABLE 3 Description of DRPs identified through pharmaceutical care at admission and discharge of hospitalized older adults with cancer.

Categories of DRPs	Total N (%)	Admission N (%)	Discharge N (%)	Example of DRPs
Omitted medications	**167 (36.9)**	**133 (37.2)**	**34 (36.2)**	
Omission of regular medication	149 (88.7)	124 (93.2)	25 (73.5)	Glaucoma eye-drops not prescribed
Untreated indication	18 (10.8)	9 (6.8)	9 (26.5)	No laxative with opioid analgesic
Overdosage	**95 (21.0)**	**69 (19.3)**	**26 (27.7)**	
Dose not adapted to GFR	36 (37.9)	29 (42.0)	7 (26.9)	Metoclopramide not adjusted to GFR
Incorrect dose of a regular medication	24 (25.3)	19 (27.5)	5 (19.2)	Anti-hypertensive drug prescribed at a higher dose than usually taken by the patient
Dose exceeds recommendations	18 (18.9)	8 (11.6)	10 (38.5)	Double dose of PPI when a preventive dosage would be sufficient
Excessive duration of therapy	7 (7.4)	5 (7.2)	2 (7.7)	PPI prescribed as prophylaxis during corticosteroid treatment, no end date
Dose too high in older adult	5 (5.3)	4 (5.8)	1 (3.8)	Zopiclone prescribed at full dose when half-dose is recommended
Dose not adapted to low weight	5 (5.3)	4 (5.8)	1 (3.8)	4 g acetaminophen prescribed to a patient weighting <50 kg
Underdosage	**22 (4.9)**	**22 (6.1)**	**0 (0)**	
Incorrect dose of a regular medication	19 (86.4)	19 (86.4)	0 (0)	Anti-hypertensive drug prescribed at a lower dose than usually taken
Dose not adapted to GFR	3 (13.6)	3 (13.6)	0 (0)	Antibiotic dosage too low for GFR
Inappropriate Medications	**70 (15.5)**	**54 (15.1)**	**16 (17.0)**	
Inappropriate drug in older adult	18 (25.7)	13 (24.1)	5 (31.3)	Long half-life benzodiazepine
Drug without evidence-based indication	17 (24.3)	14 (25.9)	3 (56.3)	PPI without an established indication
Prescription of a former regular medication	14 (20.0)	14 (25.9)	0 (0)	Former anti-hypertensive drug prescribed based on outdated information
Drug contraindicated or to be avoided	10 (14.3)	8 (14.8)	2 (12.5)	Acetaminophen prescribed in a patient with liver cytolysis
Duplicate therapy	7 (10.0)	5 (9.3)	2 (12.5)	Concomitant prescription of metoclopramide and domperidone
Inadequate substitution of regular medication	4 (5.7)	0 (0)	4 (25.0)	Lercanidipine (non-formulary) replaced by amlodipine during stay, not switched back at discharge
Drug interactions	**53 (11.7)**	**48 (13.4)**	**5 (5.3)**	
Drug–drug interactions	30 (56.6)	26 (54.2)	4 (80.0)	Posaconazole (strong CYP3A4 inhibitor) with atorvastatin (substrate)
Drug-herbal interactions	16 (30.2)	16 (33.3)	0 (0)	Blackcurrent seeds (potential antiplatelet effect) with bevacizumab
Drug-food interactions	7 (23.3)	6 (12.5)	1 (20.0)	Grapefruit (strong CYP3A4 inhibitor) with ibrutinib (substrate)
Improper method of administration	**30 (6.6)**	**20 (5.6)**	**10 (10.6)**	
Inadequate schedule	21 (70.0)	13 (65.0)	8 (80.0)	Apixaban prescribed once daily when twice is recommended
Inappropriate drug form	5 (16.7)	4 (20.0)	1 (10.0)	High-sodium effervescent tablets in a patient with hypertension
IV route when oral is possible	3 (10.0)	2 (10.0)	1 (10.0)	IV potassium when oral was possible
Drug incompatibility	1 (3.3)	1 (5.0)	0 (0)	Incompatible drugs prescribed in single IV bag
Non-formulary drug	**7 (1.5)**	**7 (2.0)**	**0 (0)**	Prescription of a non-formulary drug for COPD
Adherence issue	5 (1.1)	4 (1.1)	1 (1.1)	Patient would need a home care nurse to manage medications
Inadequate drug monitoring	3 (0.7)	1 (0.3)	2 (2.1)	Initiation of VKA without prescription for INR monitoring
Total	**452 (100)**	**358 (100)**	**94 (100)**	

Abbreviations: COPD, Chronic Obstructive Pulmonary Disease; DRP, Drug-Related Problem; GFR, Glomerular Filtration Rate; INR, International Normalized Ratio; IV, intravenous; PPI, Proton Pump Inhibitors; VKA, vitamin-K antagonist.

Cost saving analysis

Assessment of 249 pADE scores allowed to estimate total cost avoidance at $412,297 (mean $1935 per patient). Subtracting the total cost of the RECAP interventions ($57,476), the estimated total net benefit was $353,423 (mean $1766 per patient).

The cost-saving analysis of the RECAP model showed $7.2 of expenses could be avoided in ADE management for every $1 invested in pharmacist-time to perform RECAP. The sensitivity analysis showed that the model was beneficial in all scenarios (Figure 2). pADE score was the main driver of cost saving variation, followed by the cost of the ADE, while the cost of pharmacist time had only moderate impact.
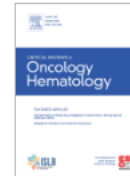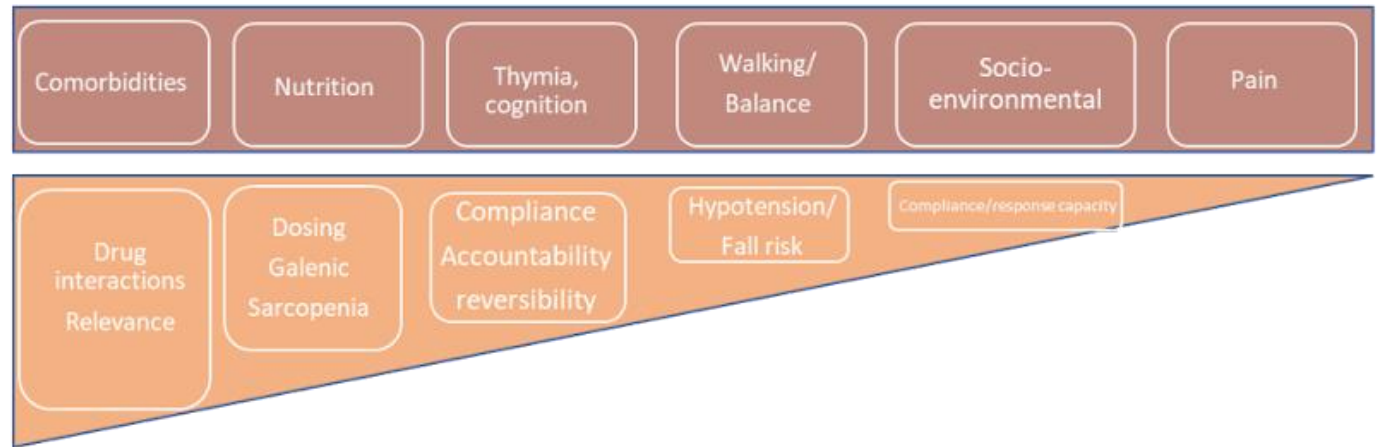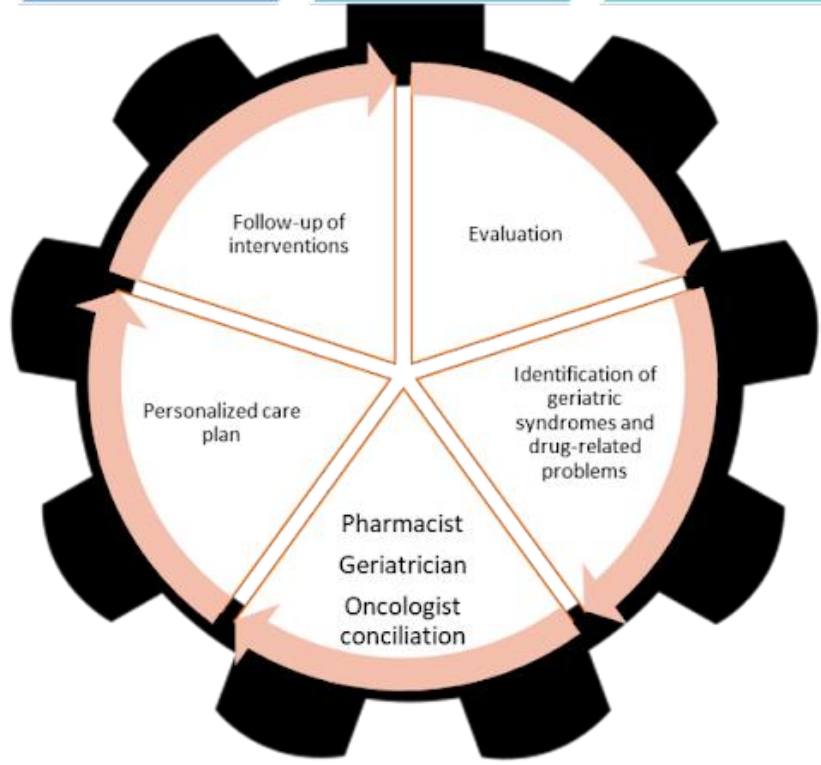
Enhancing collaboration between geriatricians, oncologists, and pharmacists to optimize medication therapy in older adults with cancer: A position paper from SOFOG-SFPO

Chloé Herledan [a] [b] [1], Anne Toulemonde [a] [c] [2], Anne-Laure Clairet [a] [d] [3], Mathieu Boulin [a] [e] [4], Claire Falandry [f] [g] [5], Laure De Decker [f] [h] [6], Catherine Rioufol [a] [b] [7], Arnaud Bayle [f] [i] [8], Nicolas Bertrand [f] [j] [9]

Diagnosis → Surgery → Postoperative complications → Follow-up → 1st line metastatic chemo → 2nd line targeted thérapy → Palliative care → End-of-life-care

Follow-up of interventions

Evaluation

Personalized care plan

Identification of geriatric syndromes and drug-related problems

Pharmacist
Geriatrician
Oncologist conciliation

Comorbidities | Nutrition | Thymia, cognition | Walking/Balance | Socio-environmental | Pain

Drug interactions Relevance | Dosing Galenic Sarcopenia | Compliance Accountability reversibility | Hypotension/Fall risk | Compliance/response capacity

Essai POG

- **Bras contrôle** (groupe A) : Evaluation onco-gériatrique initiale puis suivi standard selon les pratiques actuelles du centre.

- **Bras intervention** (groupe B) : Evaluation onco-gériatrique initiale puis suivi oncogériatrique, pharmaceutique et pharmacologique.
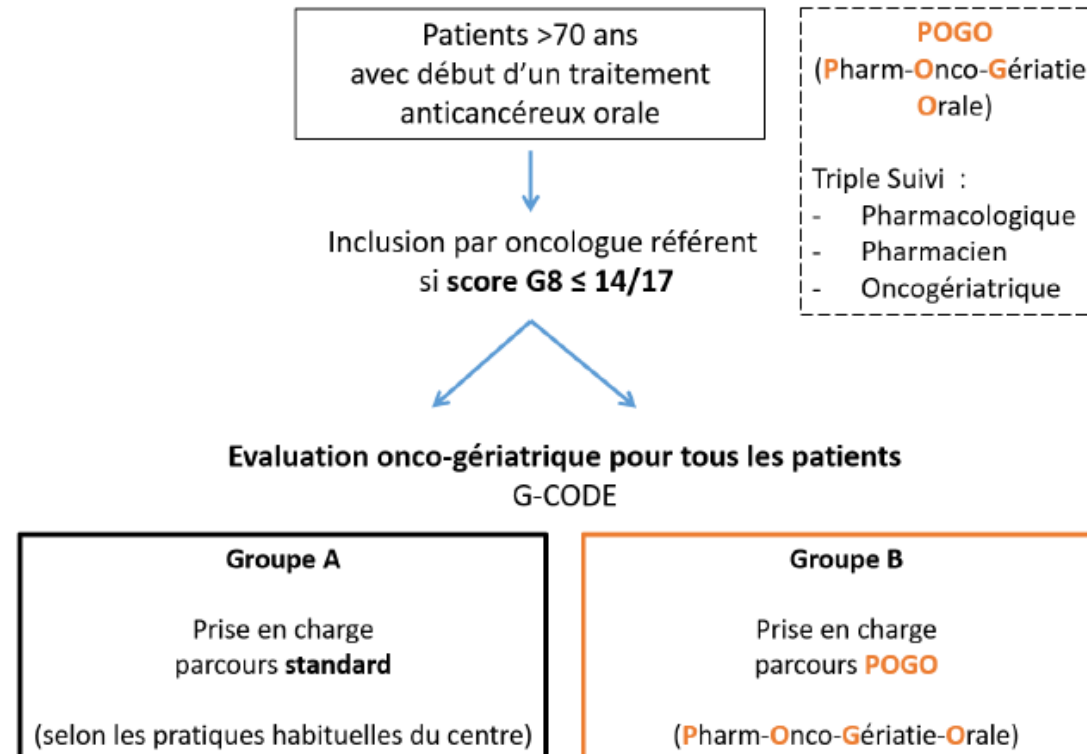
Merci de votre attention

A l'année prochaine !