Geriatrische Oncologie

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The beginning…

- Older persons = heterogeneous population

'People are never more alike than they are at birth, no more different or unique than when they enter the geriatric era'

Geriatric oncology: Belgium

- Registration of 71.651 new cancer diagnoses (excluding non-melanoma skin cancer) in Belgium in 2019.

  o Mainly older persons.

  o Respectively 69% of women and 80% of men is age 60+ at cancer diagnosis.

  o +/- 50% is age 70+ at cancer diagnosis.
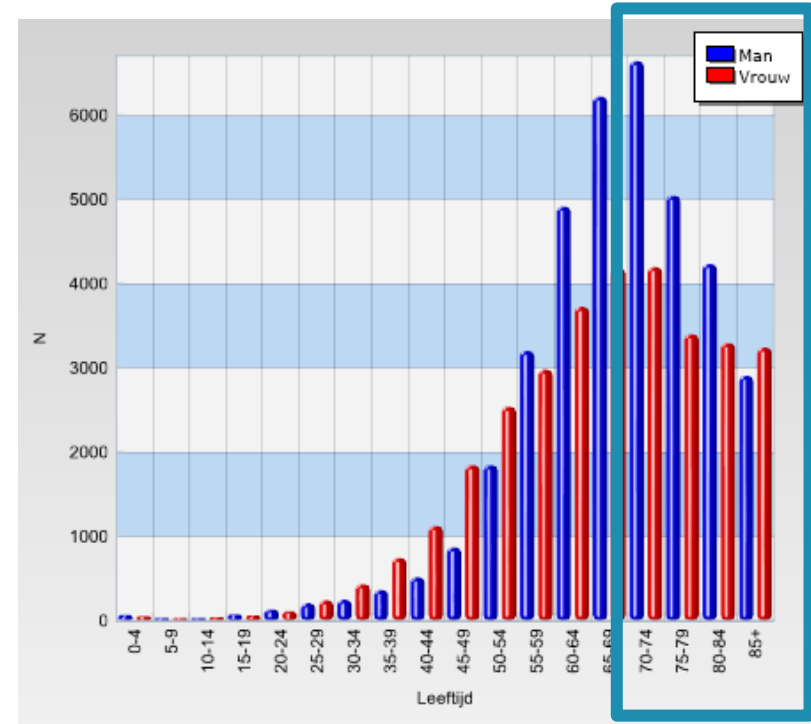
Source: incidence 2019, Belgian Cancer Registry, 2022

Geriatric oncology: treatment

- Treatment decisions in older patients with cancer
  - Lack of data from clinical studies
  - Chronological age ≠ biological age
  - Often used 'performance status' instruments: inadequate
  - Challenging questions:
    - Treatment-related implications,
    - 'too old for treatment',
    - Life expectancy,
    - (social) support, …

Comprehensive Geriatric Assessment (CGA)

CGA = process including

geriatric screening (eg. G8),

geriatric assessment,

recommendations,

interventions, and

follow-up (with geriatric screening / assessment).

CGA = internationally recommended in the care for older patients with cancer (e.g. guidelines ASCO, SIOG, NCCN).

Geriatric oncology: health status

Frail

Fit

Geriatric screening

ITEM	INSTRUMENT
Screening	- Flemish version of the Triage Risk Screening Tool (fTRST) (=GRP)
	- G8
	- Groninger Frailty Index (GFI)
	- Vulnerable Elders Survey-13 (VES-13)
	- Senior Adult Oncology Program-2 (SAOP-2)
	- Abbreviated CGA (aCGA)
	- …

- >20 different screening tools

- SIOG consensus statement:

  "to identify patients that are in need of a more extensive geriatric assessment."

L. Decoster[1]*, K. Van Puyvelde[2], S. Mohile[3], U. Wedding[4], U. Basso[5], G. Colloca[6], S. Rostoft[7], J. Overcash[8], H. Wildiers[9], C. Steer[10], G. Kimmick[11], R. Kanesvaran[12], A. Luciani[13], C. Terret[14], A. Hurria[15], C. Kenis[16], R. Audisio[17] & M. Extermann[18]

Geriatric assessment

- SIOG consensus:
  - Social data
  - Functional status
  - Nutritional status
  - Cognitive status
  - Mental status
  - Fatigue
  - Comorbidities
  - Geriatric syndromes (dementia, delirium, falls, incontinence, adherence, polypharmacy, sarcopenia…)

Domain	Tool (References)
Demographic data and social status	Questions on living situation, marital status, educational level, safety of environment, financial resources. (1,16,17,34) MOS Social Activity Survey (2,15,19) Caregiver burden (EDIZ) (13); MOS Social Support Survey: Emotional/Information and Tangible Subscales (2,15,16,19) Summary of some criteria (e.g. availability of family support, appropriateness of social environment) (17,18,30,34)
Comorbidity	Charlson Comorbidity Index (CCI) (10,14,16,18,29,30) CIRS (31,33) CIRS-G (7,8,17,33,34) NYAH (7) Number of comorbid conditions (2) Simplified Comorbidity Score (SCS) (30) summary of comorbidities (17) Hematopoietic Cell Transplantation Comorbidity Index (11) Physical Health Section (subscale of the OARS)20 (15,19)
Functional status	ADL: Katz index (1,4,7,8,10,11,13,14,17,18,30,34) IADL: Lawton scale (1,4,7,10,11,13,14,18,30,34) Performance status index (10) Barthel Index (any version) (29,31,38) Lawton-Brody IADL Scale (29) Nottingham Extended Activities of Daily Living Scale (NEADL) (31,38) Activities of Daily Living (subscale of MOS Physical Health; Medical Outcomes Study) (2,15) Instrumental Activities of Daily Living (subscale of OARS; Older Americans Resources and Services) (2,15,19) the Pepper Assessment Tool for Disability (PAT-D) (11) Visual and/or hearing impairment, regardless of use of glasses or hearing aids (13,18,34) MOS physical Health (any version) (16,19) Mobility Problem (requiring help or the use of a walking aid) (13) Timed Get Up and Go (GUG) (4,10,14,15,17,19) Hand grip strength (11) Short Physical Performance Battery (SPPB) (11) One-leg standing balance test (10,17) Walking problems/gait assessment (17,18,34)/gait speed

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Geriatric oncology: models

GA Model	Geriatric Oncology		
	Definition	Advantage	Disadvantage
Geriatric oncology unit	Specific ward with team specialized in caring for older patients with cancer that applies GA based on GEMU or ACE model[60,66]	Centralization of geriatric expertise and treatment options	Potential patient withdrawal from familiar treating oncologist; financial incentives might drive general oncologists not to refer patients; only limited No. of patients can be reached; general geriatric oncologists might miss detailed, rapidly evolving knowledge of broad field of oncology
GCT	Specialized geriatric team that applies GA in non-GA wards or in other settings on consultative basis[15,67]	Patients remain under supervision of their treating oncologists; can reach large majority of older patients with cancer; interaction between oncologists and geriatric teams is feasible	Decentralization of geriatric expertise has logistic and practical (eg, staffing) challenges; several factors may lead to low compliance of treating physicians to GCT advice; GA results may be unknown at time of treatment decision making; treating physicians might not know what to do with GA results; onset of geriatric intervention or treatment adjustment depends on local possibilities; patients who need referral to specific geriatric care programs might encounter waiting lists
Geriatric expertise not nearby	GA in standalone comprehensive cancer centers without geriatric department or private practice oncology clinic	Patients remain under supervision of their treating oncologists; validated methods can easily be used to target high-risk patients and introduce geriatric care; large majority of older patients with cancer can be reached	Realization of interaction between oncologists and geriatric teams is difficult; no gold standard to screen high-risk patients; inter-rater reliability and interpretation of results can be problem; patients who need referral might encounter waiting lists

Abbreviations: ACE, acute care for elders; CGA, comprehensive geriatric assessment; CMM, comanagement model; GA, geriatric assessment; GCT, geriatric consultation team; GEMU, geriatric evaluation and management unit; IGCT, inpatient geriatric consultation team.

+ Geriatric co-management to manage older patients in the hospital

- Belgium (+ UZ Leuven):
  o 'geriatric consultation team'
  o Inpatients + outpatients

Geriatric oncology: overview RCT's (2020 – present)

Study	N	Population	Intervention	Primary outcome	Secondary outcomes
COACH Mohile et al. JAMA Oncol, 2020	541	Patients aged ≥ 70; advanced solid tumors or lymphoma and >1 impaired GA domain	• Summary of CGA impairments and recommendations provided to oncologists	• Patient satisfaction with communication about aging-related concerns	+: Number of aging-related concerns discussed during visit; patient satisfaction for communication about overall care; Quality of Life; caregiver satisfaction with communication about aging-related patient concerns
Ørum et al. JGO, 2021	363	Patients aged ≥ 70; newly diagnosed cancer (head and neck, lung, gastrointestinal or colorectal)	• CGA followed by tailored follow-up by a multidisciplinary team • Control: CGA followed by usual care	• Adherence to cancer treatment (completion initially proposed cancer treatment within 90 days) • Impact varied between tumor sites (p<0.01)	No significant differences in daily life activities, physical performance and hospitalisation
GERICO Lund et al. BJO, 2021	142	Patients aged ≥ 70; vulnerable patients (G8 ≤ 14), stage II-IV colorectal cancer, adjuvant or palliative chemotherapy	• CGA driven interventions • Control: usual care	• Chemotherapy completion without dose reductions or delays (planned therapy) • 45% vs 28% (p=0.0366)	No significant differences in toxicity, hospitalisation, survival and QoL
GAIN Li et al. JAMA Oncol, 2021	605	Patients aged ≥ 65; solid malignancy, starting a new chemo regimen	• CGA driven interventions by multidisciplinary team • Control: usual care	• Grade 3-5 chemo-related toxicity: • 51% vs 60% (p=0.02)	+: Advance directive completion. No significant differences in ER visits, hospitalizations, unplanned readmissions, chemotherapy dose modifications / discontinuations, average length of stay or OS
GAP70+ Mohile et al. Lancet Oncol, 2021	718	Patients aged > 70; incurable solid tumors or lymphoma and >1 impaired GA domain starting a new treatment regimen	• Summary of CGA impairments and recommendations provided to oncologist • Control: usual care	• Grade 3-5 toxicity (any toxicity): • 50% vs 71% (p<0.001)	+: Hematologic toxicity; non-hematologic toxicity Similar overall survival
Perioperative intervention Nipp et al. JGO, 2022	160	Patients ≥ 65; GI cancer and surgical resection	• CGA preoperative + pre- and postoperative geriatrician management • Control: usual care	• Post-op length of stay: • Intent to treat (ITT): 7.2 vs 8.2 days (p=0.37) • Per protocol (PP): 5.9 vs 8.2 days (p=0.02)	+: ITT: Depression symptoms at post-op day 5; ESAS symptoms at post-op day 60. +: PP: Lower post-op ICU
INTEGERATE Soo et al. Lancet, 2022	154	Patients aged > 70; chemotherapy, targeted therapy or immunotherapy	• Integrated oncogeriatric care (geriatrician-led) • Control: usual care	• HRQOL (ELFI score at week 18) (baseline score minus follow-up score): • -8.1 vs -17.9 (p=0.039)	+: Unplanned hospital admissions; early treatment discontinuation
5C Puts et al. JCO,2023	350	Patients aged ≥ 70; solid tumors or lymphoma/myeloma, starting chemotherapy, targeted therapy or immunotherapy	• Geriatric assessment and management (GAM) • Control: usual care	• QoL (EORTC QLQ-C30 at 6 months) • Global QoL of 4.4 points favoring the control arm	-: functional status, grade 3-5 treatment toxicity, health care use, satisfaction, cancer treatment plan modification, hospitalisations, emergency department visits, overall survival.
G-oncoCOACH Kenis et al. RCT completed, analysis in progress	*212*	*Patients aged ≥ 70; solid tumors, starting systemic therapy*	• *CGA coordinated by a geriatric team in combination with intensive patient coaching* • *Control: usual care (CGA coordinated by an oncology team)*	• *QoL (EORTC QLQ-C30 at 6 months)*	*QoL at 3 and 12 months, patient satisfaction, functional status, falls, systemic therapy-related adverse events, geriatric recommendations, geriatric interventions, patient compliance, overall survival, hospitalisations.*

Geriatric oncology: COACH (2020)

Study	N	Population	Intervention	Primary outcome	Secondary outcomes
COACH Mohile et al. JAMA Oncol, 2020	541	Patients aged ≥ 70; advanced solid tumors or lymphoma and >1 impaired GA domain	• Summary of CGA impairments and recommendations provided to oncologists	• Patient satisfaction with communication about aging-related concerns	+: Number of aging-related concerns discussed during visit; patient satisfaction for communication about overall care; Quality of Life; caregiver satisfaction with communication about aging-related patient concerns

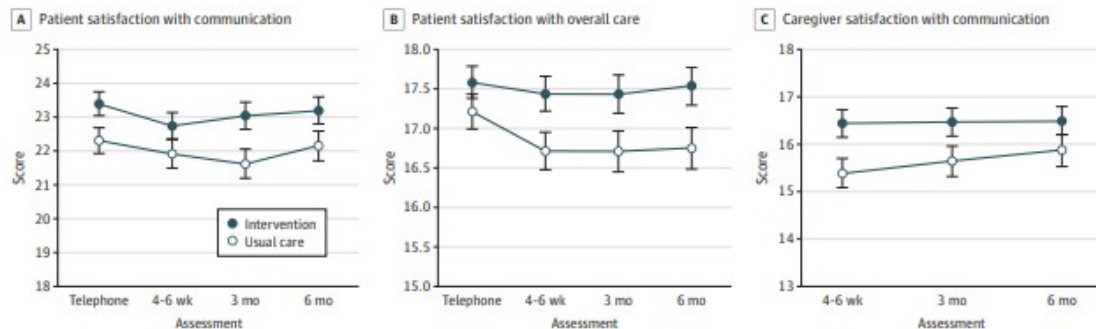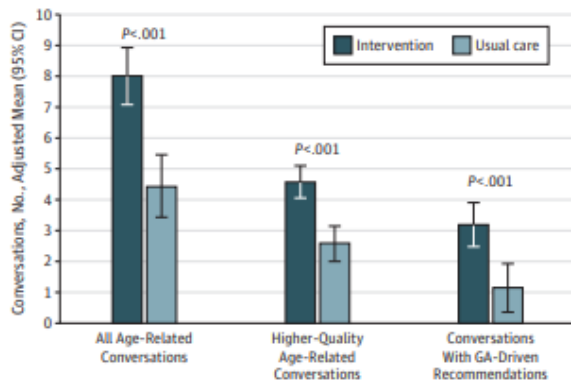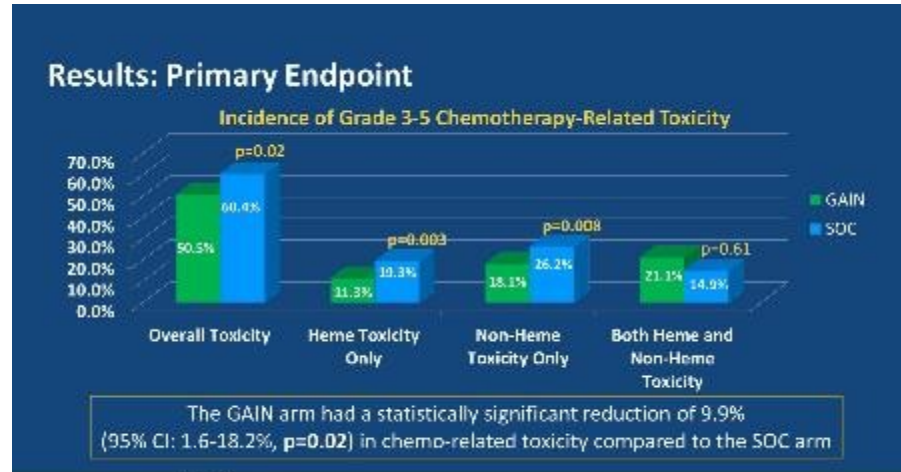Figure 2. Patient and Caregiver Satisfaction

Figure 3. Conversations About Aging-Related Conditions

The patient's visit with the oncologist within 4 weeks of completing the geriatric assessment (GA) was audiorecorded, transcribed, and coded. We used an open coding approach of themes and subthemes to quantify the number of age-related conversations, the number of aging-related discussions with high-quality communication, and the number of conversations of GA-driven recommendations communicated to patients by oncologists.
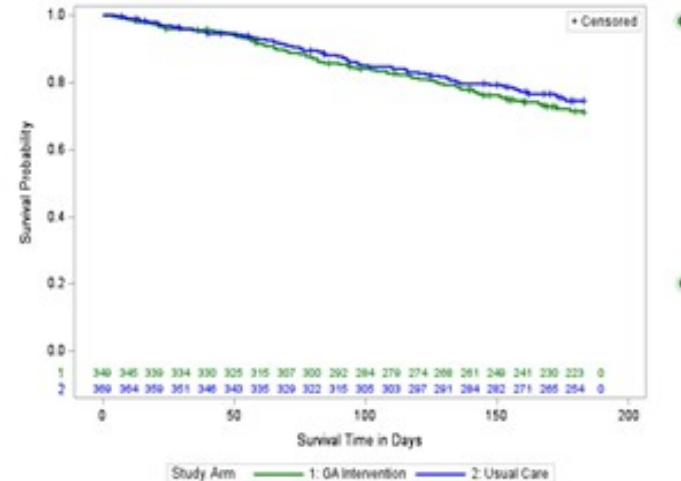
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Geriatric oncology: GAP70+ (2021)

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GAP70+ Mohile et al. Lancet Oncol, 2021	718	Patients aged > 70; incurable solid tumors or lymphoma and >1 impaired GA domain starting a new treatment regimen	• Summary of CGA impairments and recommendations provided to oncologist • Control: usual care	• Grade 3-5 toxicity (any toxicity): • 50% vs 71% (p<0.001)	+: Hematologic toxicity; non-hematologic toxicity Similar overall survival

Geriatric oncology: 5C (2023)

Study	N	Population	Intervention	Primary outcome	Secondary outcomes
5C Puts et al. JCO,2023	350	Patients aged ≥ 70; solid tumors or lymphoma/myeloma, starting chemotherapy, targeted therapy or immunotherapy	• Geriatric assessment and management (GAM) • Control: usual care	• QoL (EORTC QLQ-C30 at 6 months) • Global QoL of 4.4 points favoring the control arm)	-: functional status, grade 3-5 treatment toxicity, health care use, satisfaction, cancer treatment plan modification, hospitalisations, emergency department visits, overall survival.

Geriatric oncology: G-oncoCOACH (2023)

Study	N	Population	Intervention	Primary outcome	Secondary outcomes
G-oncoCOACH Kenis et al. RCT completed, analysis in progress	212	Patients aged ≥ 70; solid tumors, starting systemic therapy	• CGA coordinated by a geriatric team in combination with intensive patient coaching • Control: usual care (CGA coordinated by an oncology team)	• QoL (EORTC QLQ-C30 at 6 months)	QoL at 3 and 12 months, patient satisfaction, functional status, falls, systemic therapy-related adverse events, geriatric recommendations, geriatric interventions, patient compliance, overall survival, hospitalisations.

Aim: To evaluate the effectiveness of CGA coordinated by a geriatric team combined with intensive patient coaching versus CGA coordinated by an oncology team (= standard of care) on QoL in older patients with solid tumors receiving systemic therapy.

G-oncoCOACH

Methods:
- multicenter RCT (clinicaltrials.gov = NCT04069962)
- two academic Belgian hospitals (UZ Leuven / UZ Brussel)

Primary endpoint:
- global health status (GHS) of EORTC-Qlq – C30
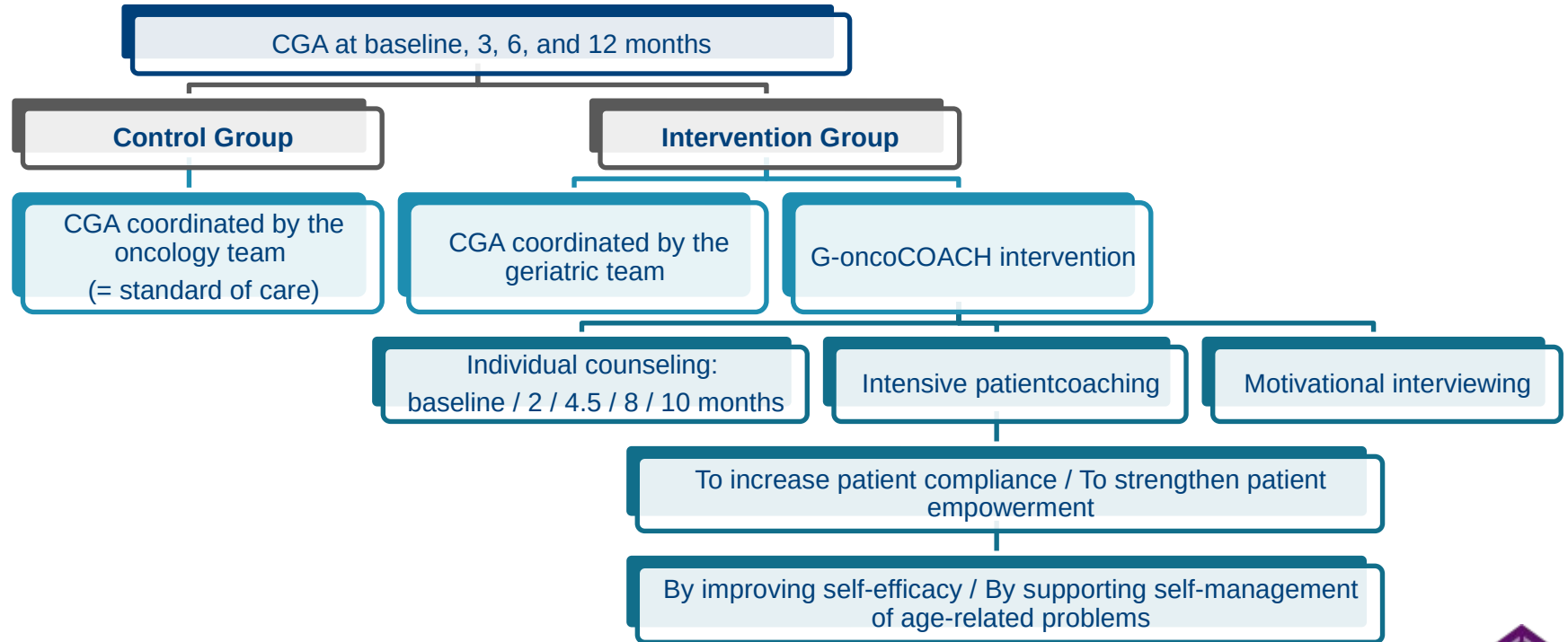- at 6 months after start of systemic therapy

Eligibility criteria:
- 70+ years,
- solid tumor,
- systemic therapy with curative or non-curative intent (first / second-line),
- physician-estimated life expectancy >6 months.

G-oncoCOACH: intervention

CGA at baseline, 3, 6, and 12 months

Control Group

Intervention Group

CGA coordinated by the oncology team
(= standard of care)

CGA coordinated by the geriatric team

G-oncoCOACH intervention

Individual counseling:
baseline / 2 / 4.5 / 8 / 10 months

Intensive patientcoaching

Motivational interviewing

To increase patient compliance / To strengthen patient empowerment

By improving self-efficacy / By supporting self-management of age-related problems

G-oncoCOACH: flow-chart

Patients approached for study (n = 267)

Patients with baseline assessment (n = 230)

Patients enrolled and randomized (1:1) in the study (n = 217)

Patients included in primary outcome analysis – QoL GHS available (n = 212)

Control group (n =107)

Intervention group (n =105)

3-month FU Qol GHS available

(n = 83)

6-month FU QoL GHS available

(n = 78)

3-month FU QoL GHS available

(n = 89)

6-month FU QoL GHS available

(n = 75)

G-oncoCOACH: results

- Inclusion period: 10/2019 to 9/2021

- Mean age: 76.8 years

- Sex: female (n=111; 52.4%)

- 3 most common tumor types

  - digestive (n=65; 30.7%)

  - thorax (n=44; 20.8%)

  - urogenital (n=33; 15.6%)

- Systemic therapy: mostly non-curative intent (n=145; 68.4%)

G-oncoCOACH: results

- Mean observed values (unadjusted) and confidence interval (CI) of the QoL GHS for:
  - baseline, 3, and 6 months
  - both treatment arms
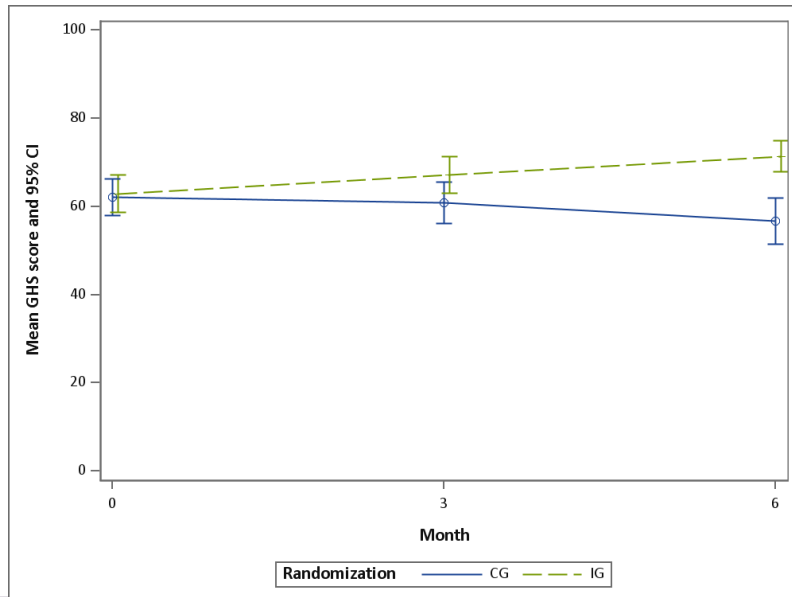
Legend: CG = control group; IG = intervention group

- CG and IG difference in change of adjusted* EORTC Qlq-C30 GHS
  - 6 months versus baseline
  - 12.8 points in favor of the IG (95%CL 6.7-18.8; p<0.0001)
    - **CG**: decline of **8.2**
    - **IG**: improvement of **4.5**

*Analysis adjusted for: age, sex, ECOG-PS, G8, ADL, IADL, falls history, pain, fatigue, MMSE, GDS, polypharmacy, CCI, intent of systemic therapy, tumor type, diagnosis setting, 'randomization group * follow-up month'.

G-oncoCOACH: conclusion

CGA coordinated by a geriatric team combined with extensive patient coaching improves QoL GHS in older patients with cancer compared to CGA coordinated by an oncology team.

Secondary endpoints (e.g. QoL at 12 months, patient satisfaction, severe systemic therapy-related adverse events, unplanned readmissions, survival) under analysis.

Conclusion

- CGA in geriatric oncology:
  - Detects previously unknown geriatric problems,
  - Influences treatment decisions,
  - Tailored geriatric interventions,
  - Prognostic and predictive value (e.g. survival),
  - Improved communication / shared-decision making process,
  - Reduced chemotherapy-related toxicity,
  - Improvement of functional status-related outcomes,
  - Improvement of likelihood of treatment completion,
  - Improved quality of life.

Conclusion

Awareness for age-related problems by healthcare professionals in daily oncology practice.

Implementation of CGA and in particular geriatric interventions = a challenge.

Ultimate goal = improvement of care for older patients with cancer!

Thank you!

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