GFI
The Groningen Frailty Indicator

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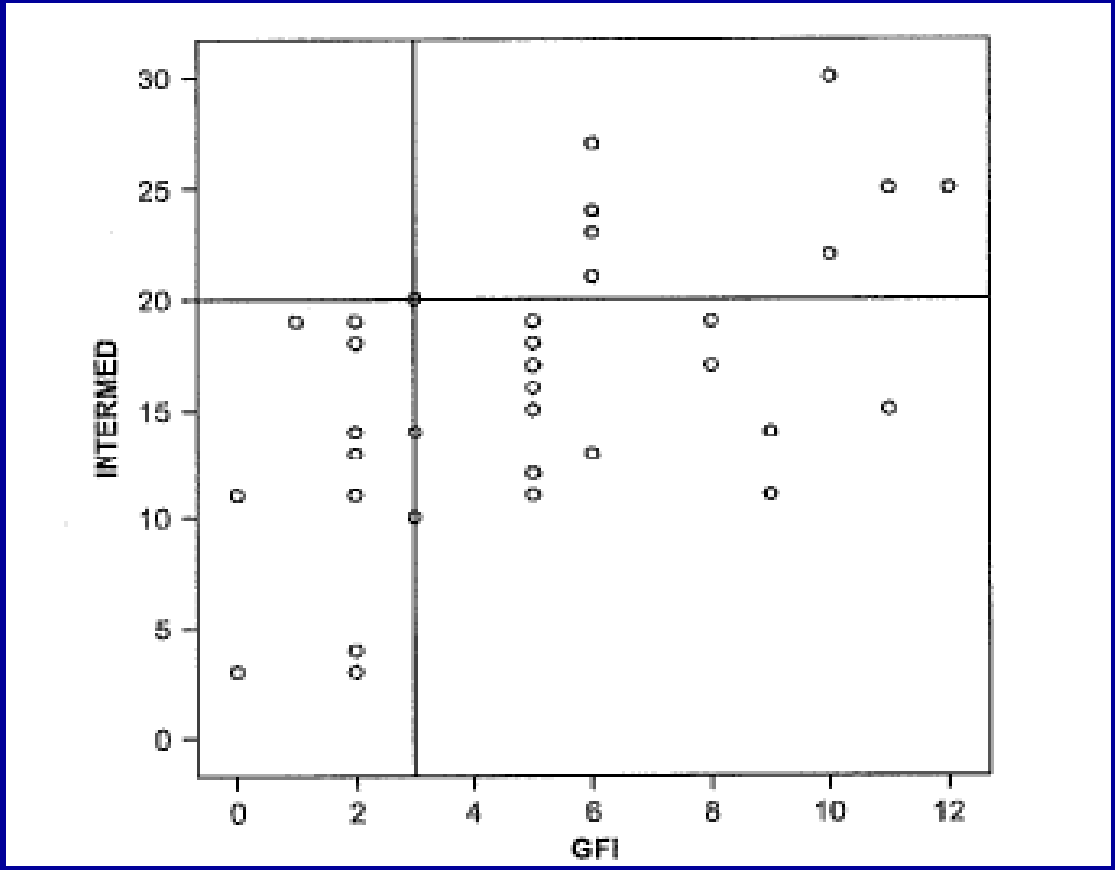
15-item screening instrument to determine frailty

		Number of questions
Mobitlity	:	4
Physical fitness	:	1
Vision	:	1
Hearing	:	1
Nourishment	:	1
Morbidity	:	1
Cognition	:	1
Psychosocial	:	5

Frailty associated with GFI ≥ 4



Comparison of 39 consecutive elderly patients, admitted to the Internal Medical Ward between GFI and InterMed

Slaets et al Med Clin N Am 90 (2006) 593-601

Comparison of 3 pre-screening tools aCGA, VES 13, GFI with entire CGA as gold standard

Keller et al: Critical Reviews in Oncology/Hematology, 2010; 75: 243-248

Demographic and clinical characteristics of the participants

Variable	*N*	%
Gender		
Male	68	60
Female	45	40
Age in years (mean ± SD)		77 ± 4
Living situation		
With partner	66	58
Alone	38	34
Nursing home	5	4
With children	4	4
Months since cancer diagnosis (mean ± SD)		79 ± 141
Cancer diagnosis		
Prostate	36	32
Lung	13	11
Breast	17	15
Colon	17	15
Other	30	27

Keller et al, CROH 75 (2010) 243-248

Patient characteristics

	%
ADL dependency	
ADL independent	39
Impairment in one ADL domain	31
Impairment in two ADL domains	10
Impairment in three or more ADL domains	20
IADL dependency	
IADL independent	23
Impairment in one IADL domain	10
Impairment in two IADL domains	16
Impairment in three or more IADL domains	51
Cognitive impairment	
No cognitive impairment	85
Mildly cognitively impaired	11
Poor cognitive status	3
Depression	
Major	4
Mild	26

Keller et al, CROH 75 (2010) 243-248

Results of pre-screening tests

Mean GFI 4.2 (SD 2.55)

Average time 15 minutes

Classified 31% high risk of vulnerability

Sensitivity 39%

Negative predictive value 40%

Results of pre-screening tests

Mean VES-13 3.77 (SD 2.77)

Average time 15 minutes

Classified 49% high risk

Sensitivity 61 %

Negative predictive value 48%

Results of pre-screening tests

aCGA

Average time 30 minutes

negative predictive value

88% cognition

97% ADL

96% GDS

92% IADL

Conclusion

- GFI and VES 13 have low negative predictive values: 40% and 48%
- aCGA has high negative predictive values for GDS, cognition, ADL and IADL
- GFI and VES 13 are not very useful as a screening tool in a group of cancer patients older than 70 years with a high risk of vulnerability

Predictive value of geriatric assessment for patients older than 70 years, treated with chemotherapy

202 cancer patients with indication for chemotherapy underwent

- GFI
- Mini Nutritional Assessment (MNA)
- IQ Code
- MMSE

Before, after at least 4 cycles and after 6 months

Aaldriks et al CROH (79) 2011: 205-212

Characteristics of patients (n = 202)

			Years		SD
Age	Mean Minimum Maximum		77 71 92		4.22
				n	%
Gender		Male Female		90 112	45 55
Number of chemotherapy cycles		< 4 ≥ 4 Unknown		74 118 10	37 58 5
Type of malignancy		Upper digestive tract Colorectal cancer Breast cancer Ovarian cancer Hematological malignancies Other types* Unknown		19 60 34 20 36 28 5	9 30 17 10 18 14 2
Purpose of chemotherapy		Adjuvant/curative Palliative Unknown Missing		80 111 7 4	40 55 3 2

*The category other types of malignancy consisted mainly of prostate cancer (*n*=12), lung cancer (*n*= 7) and urothelial cell cancer (*n*=5)

Aaldriks et al CROH 79 (2011) 205-212

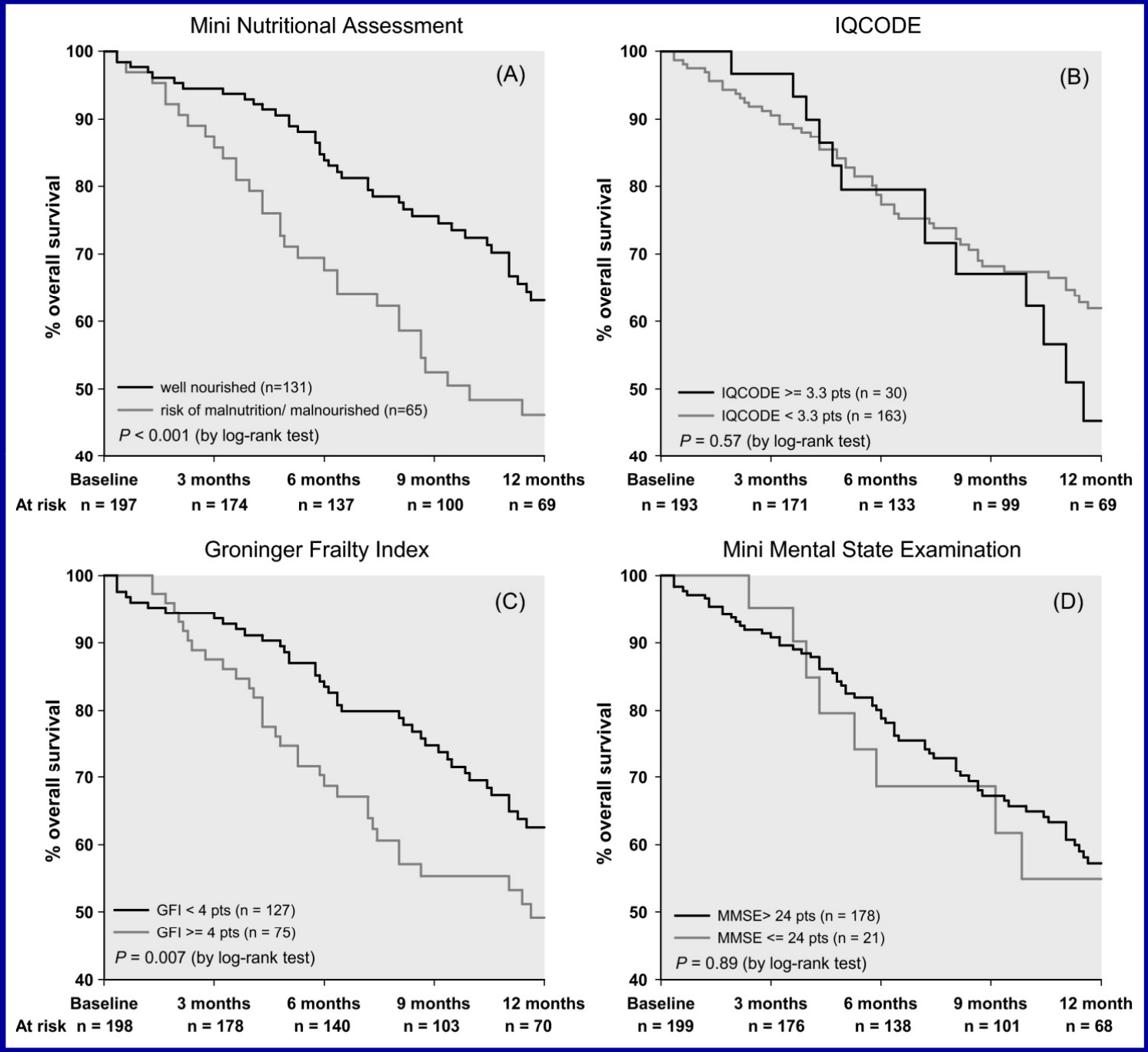
Number of chemotherapy cycles in relation to GA

Test	Baseline	< 4 cycli (n=74)	≥ 4 cycli (n=118)	p-value
GFI	< 4	57%	67%	0.15
	≥ 4	43%	33%	
MNA	24-30	51%	75%	0.001
	< 24	49%	25%	
MMSE	> 24	89%	97%	0.04
	≤ 24	11%	3%	
IQ-CODE	< 3.3	80%	87%	0.20
	≥ 3.3	20%	13%	

Hazard ratio for mortality

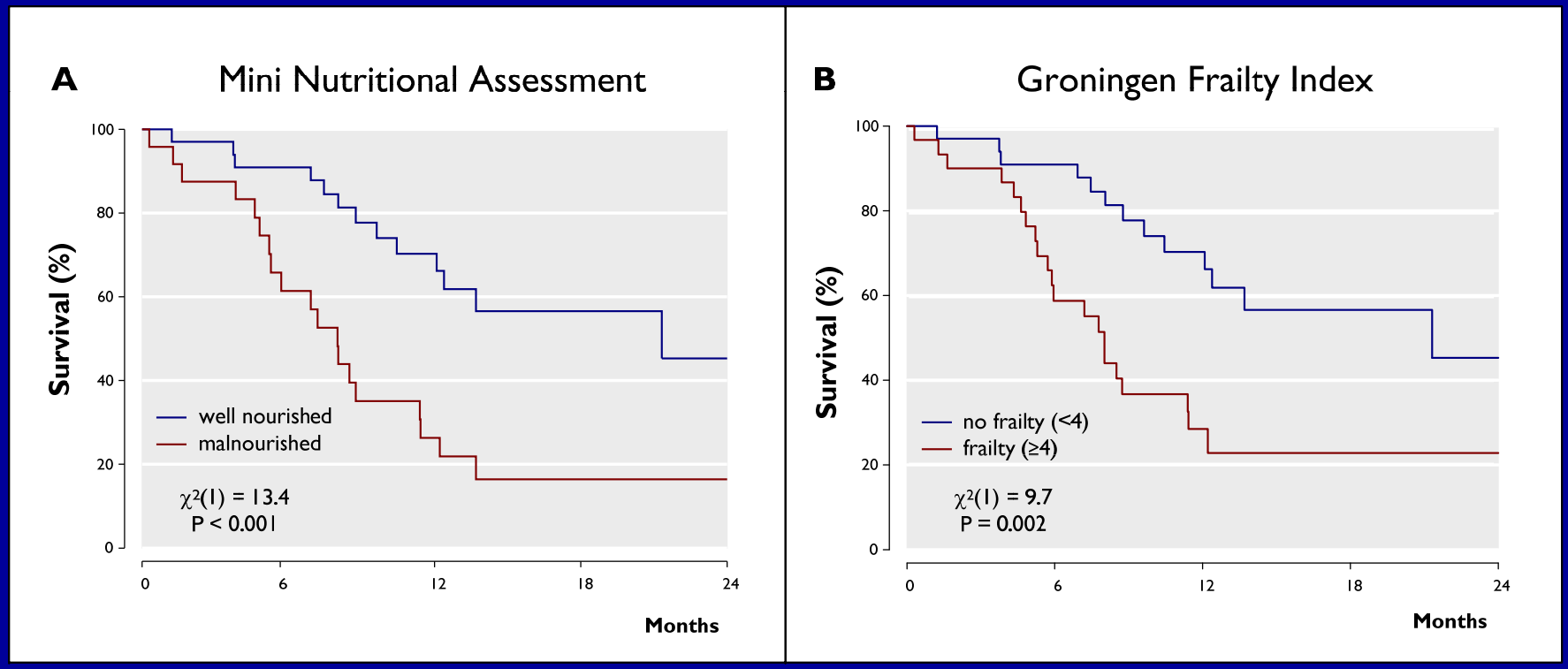
corrected for sex, age, purpose of chemotherapy, type of malignancy

Test	Baseline	HR (95% C.I.)	p-value
GFI	≥ 4	2.00 (1.26-3.17)	0.004
MNA	< 24	2.54 (1.55-4.15)	< 0.001
MMSE	≤ 24	0.92 (0.44-1.93)	0.82
IQ-CODE	< 3.3	0.93(0.49-1.73)	0.81



A. Aaldriks et al. CROH 2011;79:205-212

Survival breast cancer (n = 63)



Conclusion

GFI seems an useful screening tool in cancer patients older than 70 years who are considered suitable by their oncologists to receive chemotherapy

GFI and MNA predict survival in elderly cancer patients who are considered to be fit for chemotherapy