A new frailty scoring in "*clinically fit*" older patients with malignant hemopathies admitted to receive chemotherapy

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Background: « clinically fit » patients

STANDARD CHEMOTHERAPY

INTERVENTIONS DOSE REDUCTION

PALLIATIVE TREATMENT

Background: prognostic factors

	Loss of functional autonomy	Mild Cognitive Impairment	Anemia	Inflammation
Measured	ADL	MMSE	Hemoglobin level	CRP (⇧IL-6)
Cut-off score	≤5	<27	<11g/dl	≥2-5 mg/l
Overall survival	✓	✓	✓	✓
Toxicity	✓	✓	✓ ?	✓
Frailty	✓	✓	✓	✓

Hubbard et al 2009 J Cell Mol Med
Roy 2011 Clin Geriatr Med
Clegg et al 2013 Lancet
Röhrig 2016 Clin Inter Aging
Balducci 2003 Crit Rev Oncol Hem
Nabhan et al 2011 BJH
Dubruille et al 2015 J Geriatr Oncol

Background: loss of functional autonomy

	Loss of functional autonomy
Measured	ADL
Cut-off score	≤5
Overall survival	✓
Toxicity	✓
Frailty	✓

Background: mild cognitive impairment

		Mild Cognitive Impairment
Measured		MMSE
Cut-off score		<27
Overall survival		✓
Toxicity		✓
Frailty		✓

Background: mild cognitive impairment

Normal aging

- slight cognitive changes

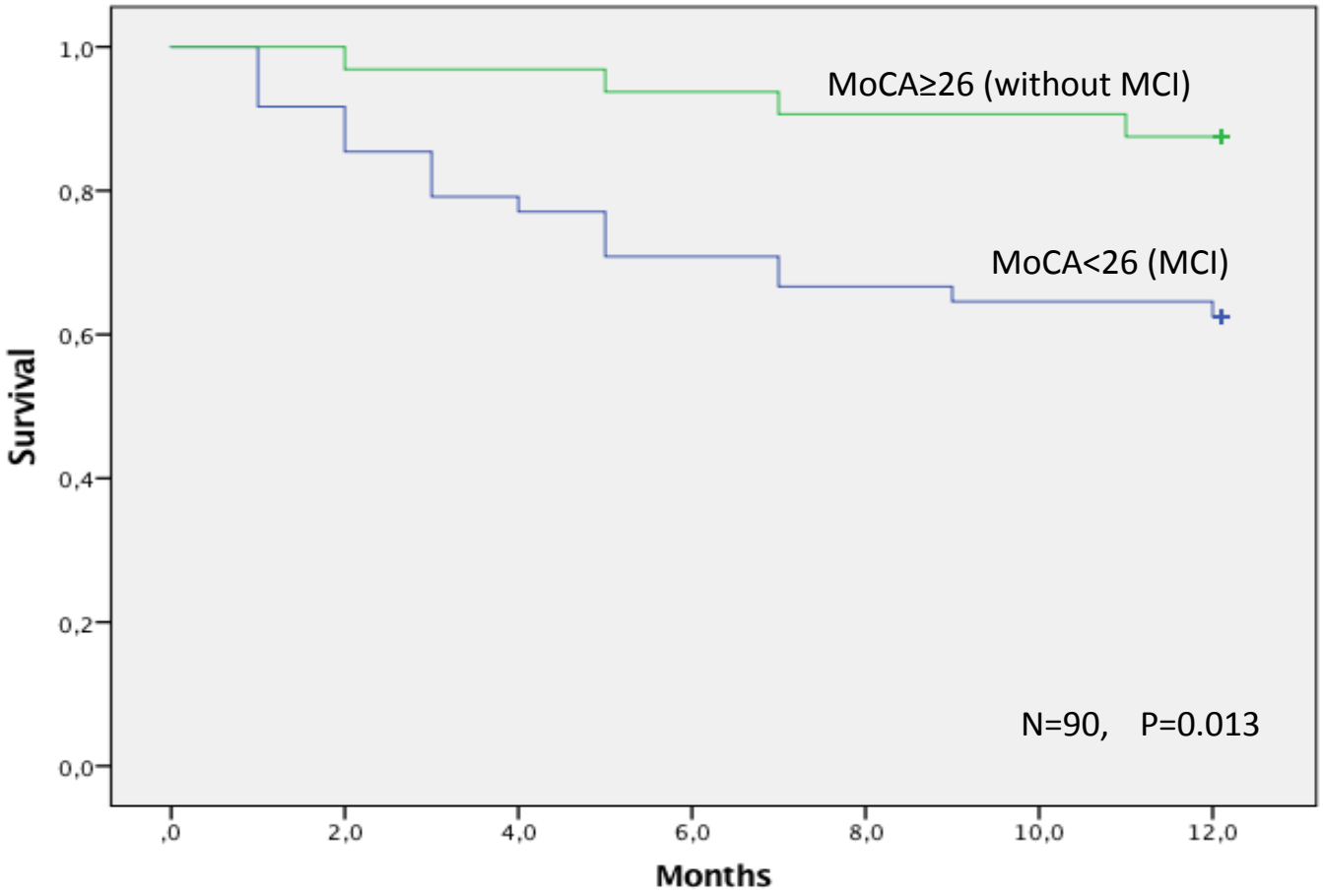
Mild Cognitive Impairment

- Cognitive change are of concerns to individual
- One or more cognitive domains impaired significantly
- **Preserved** activities of daily living

Dementia

- Cognitive impairment severe enough to **interfere** with everyday abilities

Background: mild cognitive impairment



Dubruille et al 2015 J Geriatr Oncol

Background: biological factors

		Anemia	Inflammation
Measured		Hemoglobin level	CRP(⇧IL-6)
Cut-off score		<11g/dl	≥2-5mg/l
Overall survival		✓	✓
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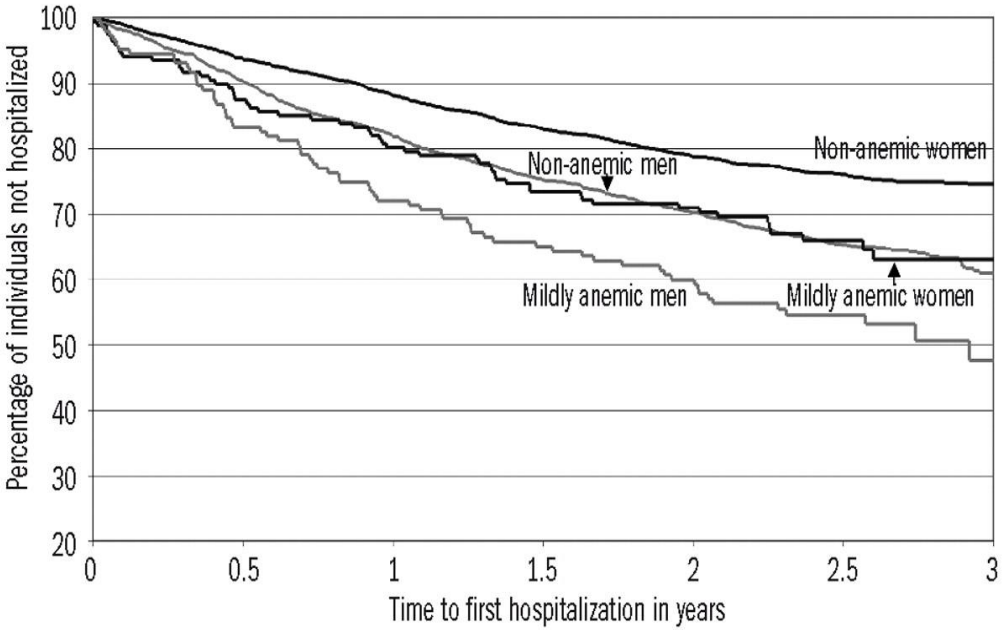
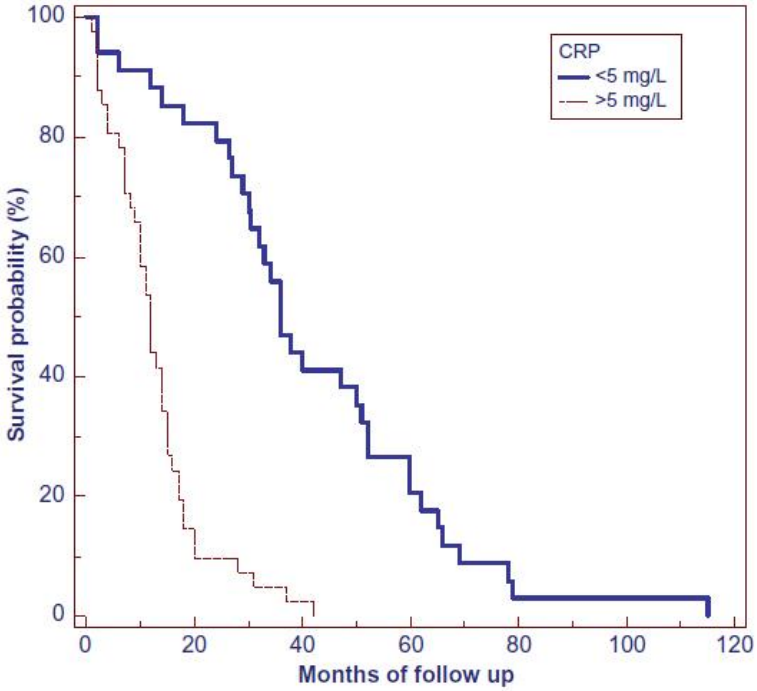
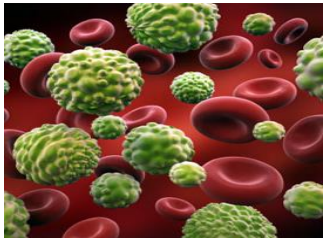
Background: biological factors





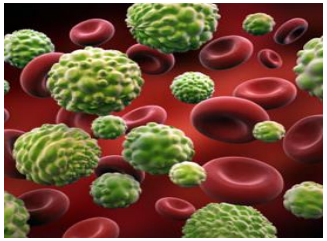
Riva et al 2009 haematologica
Sladoje et al 2014 Dovepress

Methods (1)



- Consecutive inpatients ≥ 65 years
- Suffering from a malignant hemopathie
- Hospitalized for a chemotherapy
- CGA completed
- Biological parameters and deaths were extracted from medical records

Methods (2)



Patients	*Additive total score**
Fit	0-1
Vulnerable	2
Frail	3-4

*Based on loss of functional autonomy, MCI, anemia and inflammation

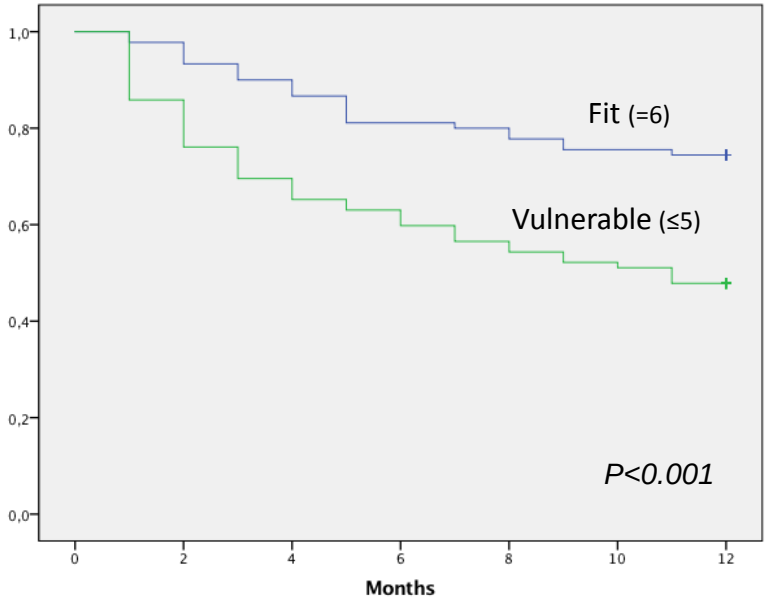
Results (1): characteristics of patients (n=182)

	N	%
Age		
65-74 years	81	44
≥75 years	101	56
Gender		
Men	99	54
Women	83	46
Diagnosis		
Favorable prognosis	151	83
Unfavorable prognosis	31	17
Disease recurrence		
Initial cancer	101	55
Cancer relapse	81	45
Initial treatment choice		
Full dose chemotherapy	104	62
Reduced-dose chemotherapy	64	38
Tolerance to treatment		
No intolerance to treatment	47	72
Intolerance to treatment	121	28

Results (2): clinical and biological vulnerabilities

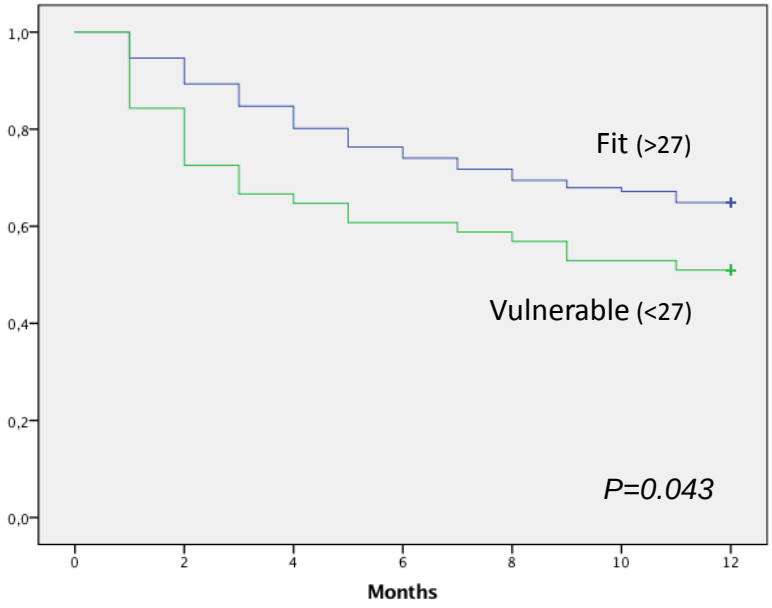
	Score range	Cut-off score	Vulnerable %
Clinical characteristics			
Functional status (ADL)	0-6	≤5	51%
Instrumental functional status (IADL)	0-8	≤7	67%
Risk of falls status (number of falls)	Number	≥2	12%
Fatigue status (Mob-t)	0-6	<5	71%
Nutritional status (MNA)	0-30	≤23,5	65%
Cognitive status (MMSE)	0-30	<27	28%
Emotional status (GDS-4)	0-4	≥2	56%
Polypharmacy (number of drugs)	Number	≥5	60%
Comorbidities (CCI)	0-30	≥2	45%
Biological characteristics			
Hemoglobin level (Hg)	/	<11g/dl	48%
Sodium (Na)	/	<130 mmol/l	1%
Potassium (K)	/	>5 mmol/l	1%
Albumin (Alb)	/	<3.5 mmol/l	29%
Urea	/	>50 mmol/l	31%
Creatinine	/	>1 mmol/l	34%
Glomerular filtration rate	/	<60 ml/min	38%
Serum C-reactive protein (Crp)	/	≥2mg/l	80%

Results (3): univariate analyses

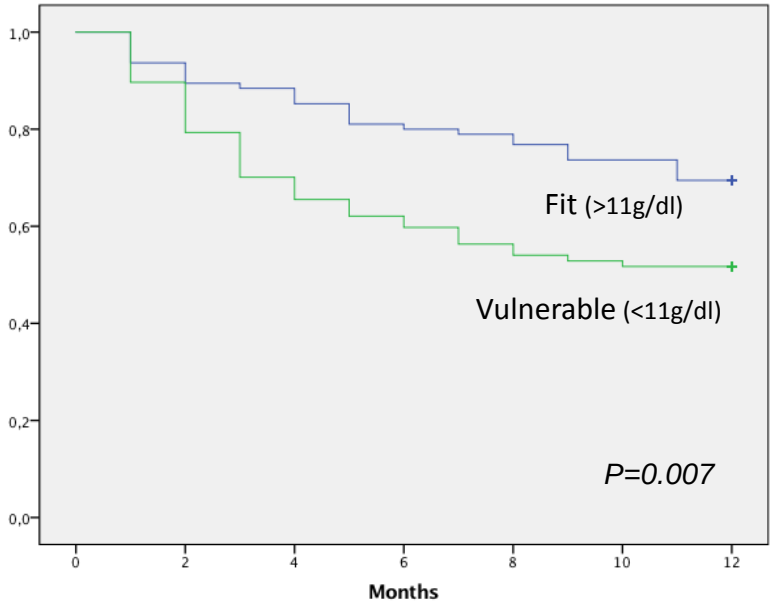


Kaplan–Meier survival curve for "*clinically fit*" older patients with malignant hemopathies, according to the ***ADL*** values

Kaplan–Meier survival curve for "*clinically fit*" older patients with malignant hemopathies, according to the ***MMSE*** values

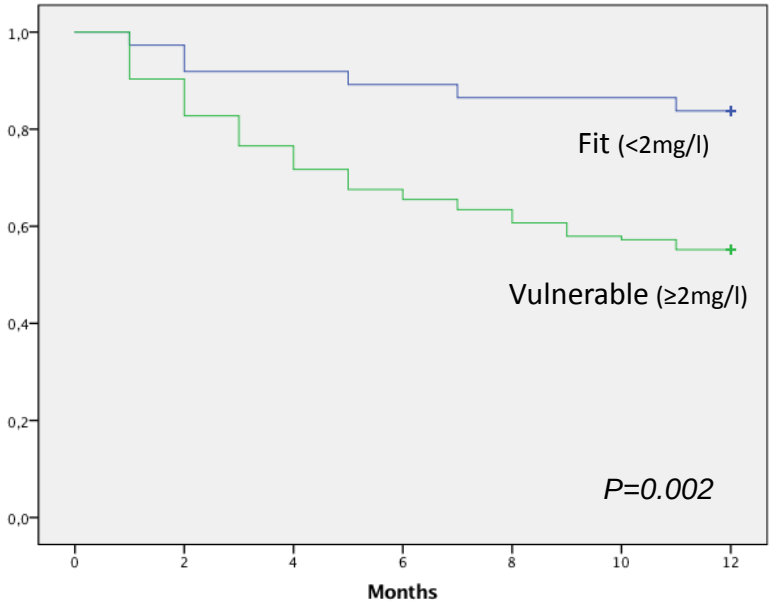


Results (3): univariate analyses



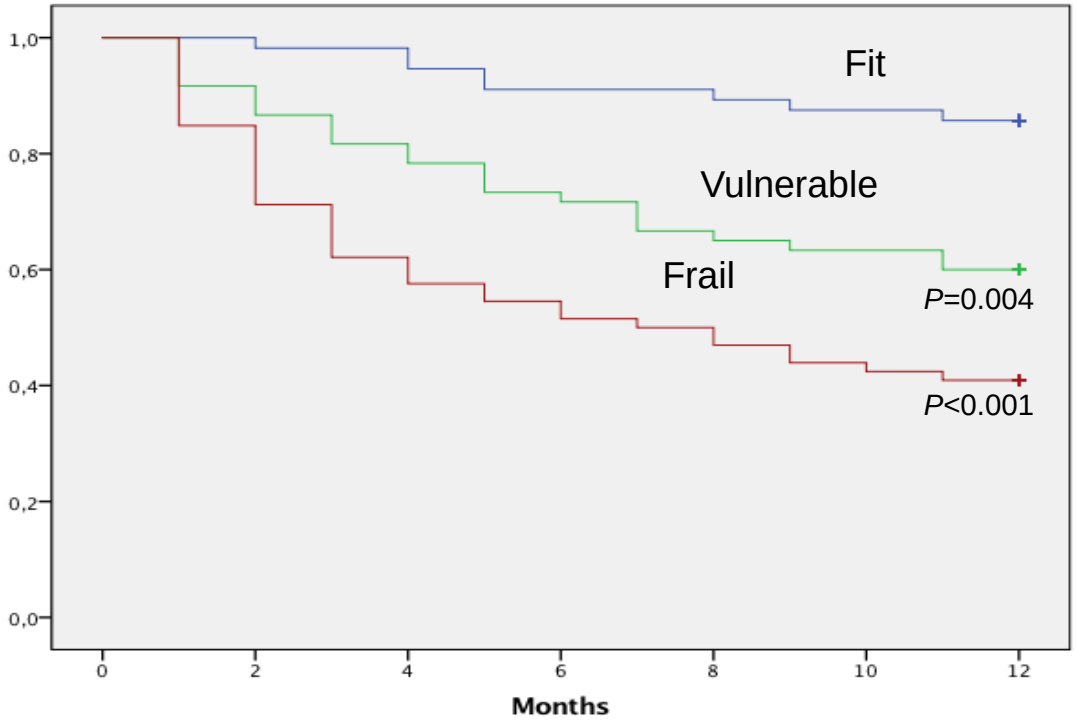
Kaplan–Meier survival curve for "*clinically fit*" older patients with malignant hemopathies, according to the ***hemoglobin level***

Kaplan–Meier survival curve for "*clinically fit*" older patients with malignant hemopathies, according to the ***CRP level***

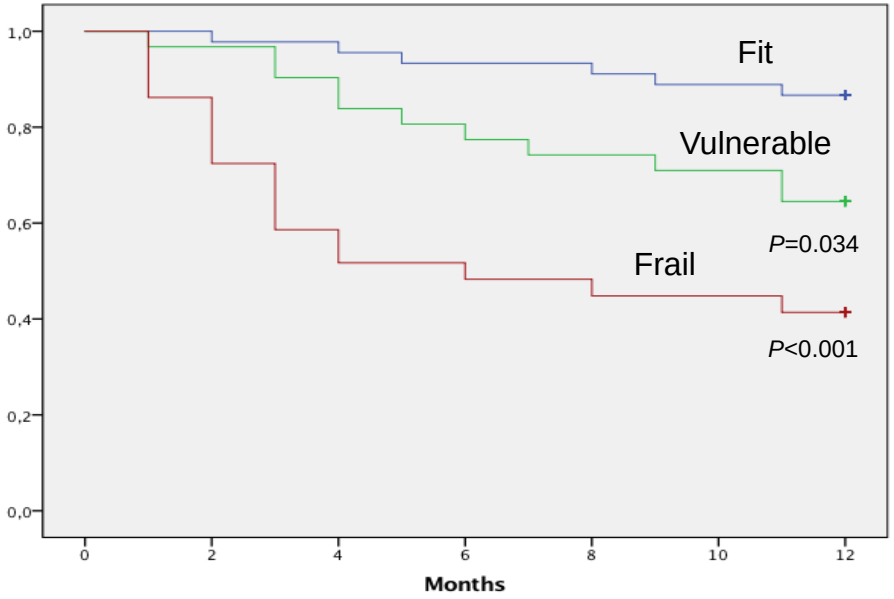


Results (4): OS stratified with our frailty score

Patient status	*Additive total score*	*N. of patients (%)*	*OS %*
Fit	0-1	56 (31)	86
Vulnerable	2	60 (33)	60
Frail	3-4	66 (36)	41

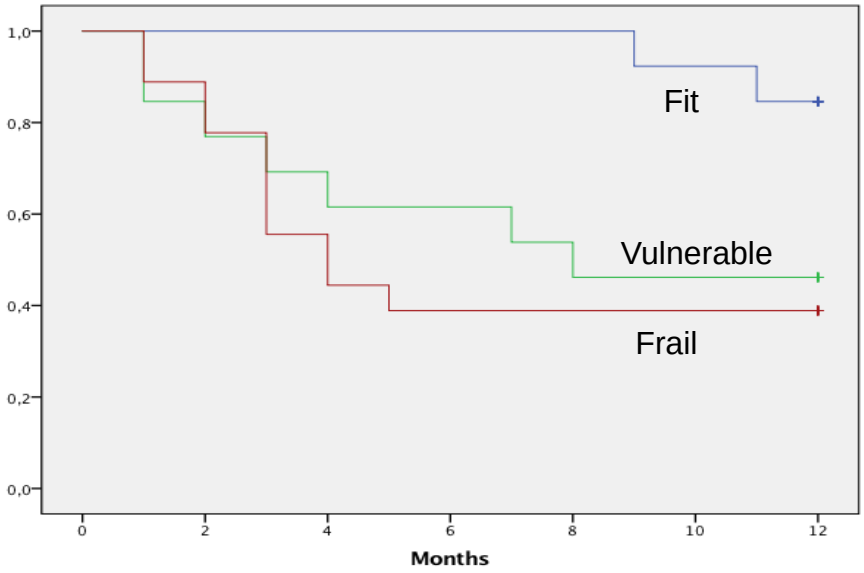


Results (5): OS in non-Hodgkin lymphoma and ≥80 yrs

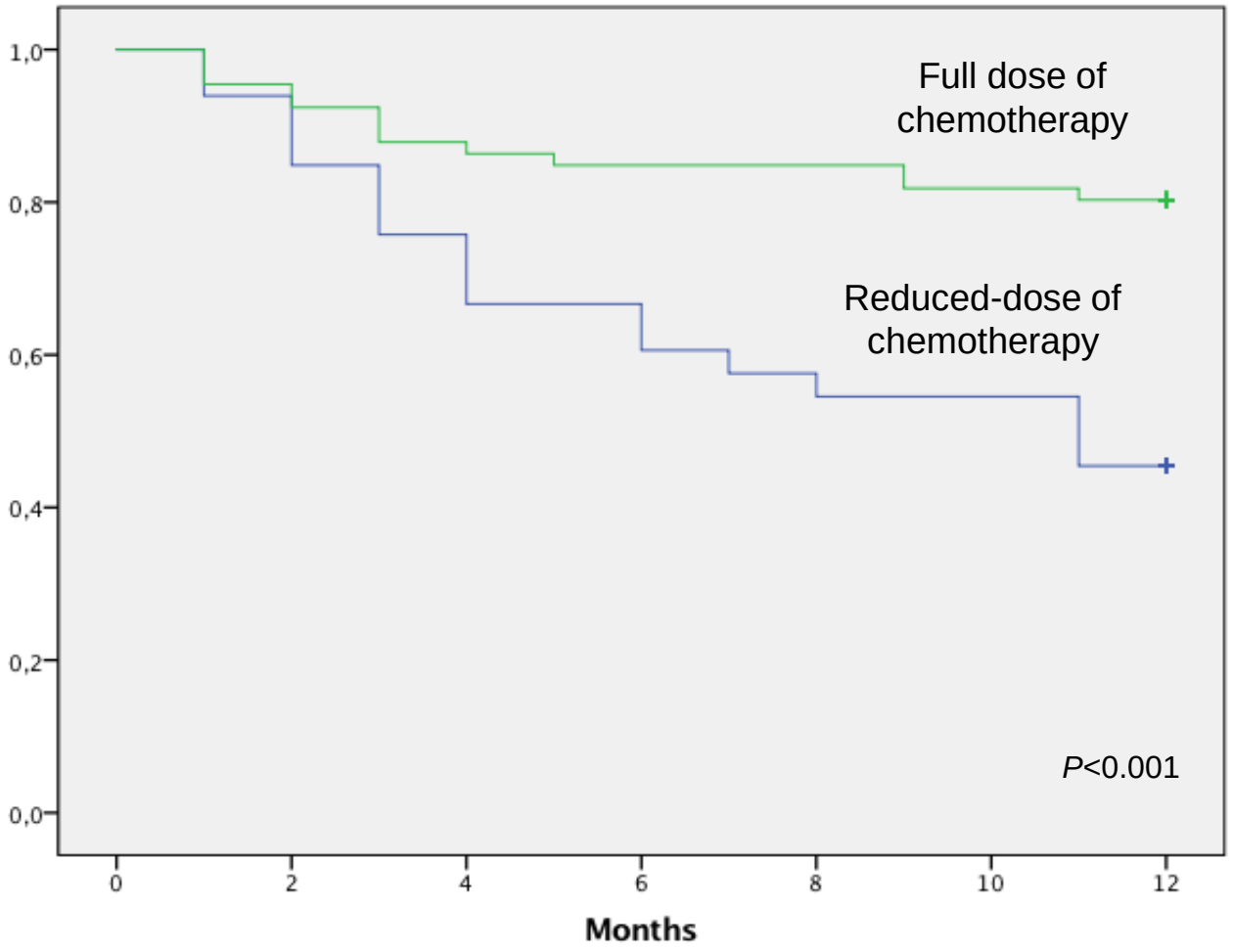


Our frailty score among patients with non-Hodgkin lymphoma

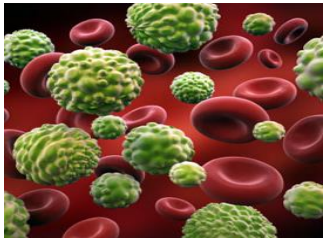
Our frailty score among patients aged ≥80 years



Results (6): OS stratified with initial treatment choice



Conclusions (1)



Our frailty score:

- Helps clinician
- Detects unsuspected “frail” patients
- Detects very fit older patients aged ≥80 yrs

Conclusions (2)

Prospective studies are needed:

- To validate the score in other malignant hemopathies
- To correlate the score with treatment-related toxicity

Acknowledgments