Factors affecting quality of life during and after stem cell transplantation in long term survivors – comparison of autologous and allogeneic stem cell transplantation

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Institute of Hematology
and Blood Transfusion

Charles University
General Hospital

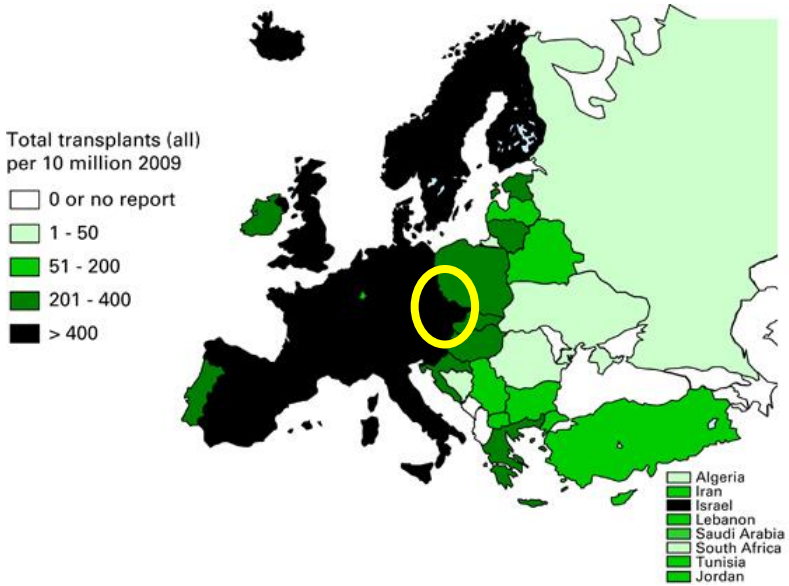
Background

- SCT is curative approach, however is accompanied with quality of life impairment at least temporarily
- There have been observed transitional decrease of QoL early after transplantation with improvement within 1-2 years
- There have been some factors identified to influence QoL, physical, functional, emotional, social, spiritual well being
  - age
  - diagnosis
  - gender
  - personality
  - cGVHD
- There are different findings according to long-term SCT survivors QoL comparing to general population

Syrjala KL et al, BMT 1993, McQuellon RP et al BMT 1997, Fraser SJ et al Blood 2006, Pidala J et al Blood 2009, Wong FL eta al 2010, Pidala J et al Blood 2011, Herzberg et al BMT 2012

Project goals

- to describe QoL in SCT population on national level
  - retrospective survey among SCT survivors
  - prospective evaluation



Baldomero H et al, BMT 2011

Methods

- **Retrospective study:** - single questionnaire for pts after SCT

- **Prospective study:** - questionnaire at the time of SCT indication, at the time of admission to SCT, day +100, 1 and 2 years after SCT

- **Study participants** : pts from 8 Czech Transplant Centres
  - signing inform consent
  - during regular visits, post mail

- **Study period:** retrospective study Jan 2011- June 2012
  prospecive study: July 2011 – July 2012

Methods

- **QoL questionnaire:** **FACT-G**

				normal values[1]
PWB -	Physical well-being	7Q	28 points	24.9
SWB -	Social well-being	7Q	28 points	20.2
EWB -	Emotional well-being	6Q	24 points	19.5
FWB -	Functional well-being	7Q	28 points	20.4
FACT-G total		27Q	108 points	86.6

- **Transplant related data:** EBMT/Czech national SCT registry PROMISE A Questionnaire – physicians

  age, sex, dg, SCT type, conditioning, disease status, best response, aGVHD, cGVHD, relapse

- **Statistical analysis:** Kruskal – Wallis test, Two-sample Wilcoxon Test multivariant analysis

Holzner B et al, Acta Oncol 2004

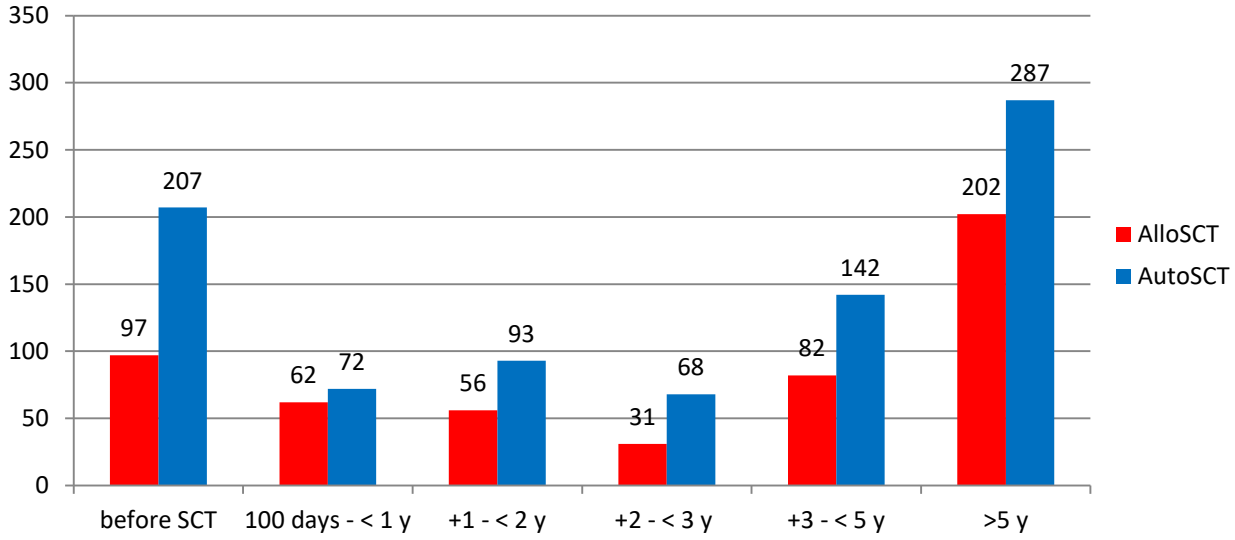
Present Analysis

- retrospective part - last data entry June 2012
- pretransplant cohort from prospective analysis - last data entry June 2012

- Analyzed timepoints:
  - before/at the time SCT
  - up to 1y after SCT
  - 1-2y after SCT
  - 2-3y after SCT
  - 3-5y after SCT
  - >5y after SCT

Patients Population

Question. n, % of SCT	AlloSCT (n = 530)	AutoSCT (n = 869)	∑ (n = 1399)
before SCT	97 (18)	207 (24)	304
100 days - < 1 y	62 (12)	72 (8)	134
+1 - < 2 y	56 (11)	93 (11)	149
+2 - < 3 y	31 (6)	68 (8)	99
+3 - < 5 y	82 (16)	142 (16)	224
>5 y	202 (38)	287 (33)	489



	Follow up
AlloSCT	4.5 (0.2-21.6)
ASCT	4.4 (0.2-17.2)

Patients characteristic

	AlloSCT (n = 530)	**AutoSCT** (n = 869)	**∑** (n = 1399)
Female sex, %	235 (44)	410 (47)	645
Male sex, %	295 (56)	459 (53)	754
Age at SCT median, y (range)	43.2 (1.7-70.9)	55.2 (10.5-70.6)	51.5 (1.7-70.9)
Dg., %			
ALL	83 (16)		
AML	156 (29)		
CML	61 (12)		
MDS	53 (10)		
BM failure	35 (7)		
MPN	32 (6)		
CLL	31 (6)		
NHL	29 (5)	401 (46)	
HL		74 (9)	
MM		318 (37)	
others	50 (9)	76 (9)	

Patients characteristic

		AlloSCT n = 530 (%)	AutoSCT n = 869 (%)
Stem cell source:	PBPC	380 (72)	859 (99)
	BM	150 (28)	10 (1)
Conditioning (n=427)	MAC	286 (67)	
	RIC	141 (33)	
aGvHD (n= 424)	gr. 0	235 (55)	
	gr. I + II	171 (40)	
	gr. III + IV	18 (4)	
cGVHD (n = 433)	reported	164 (38)	
Relapse[+]		61 (14)	148 (22)

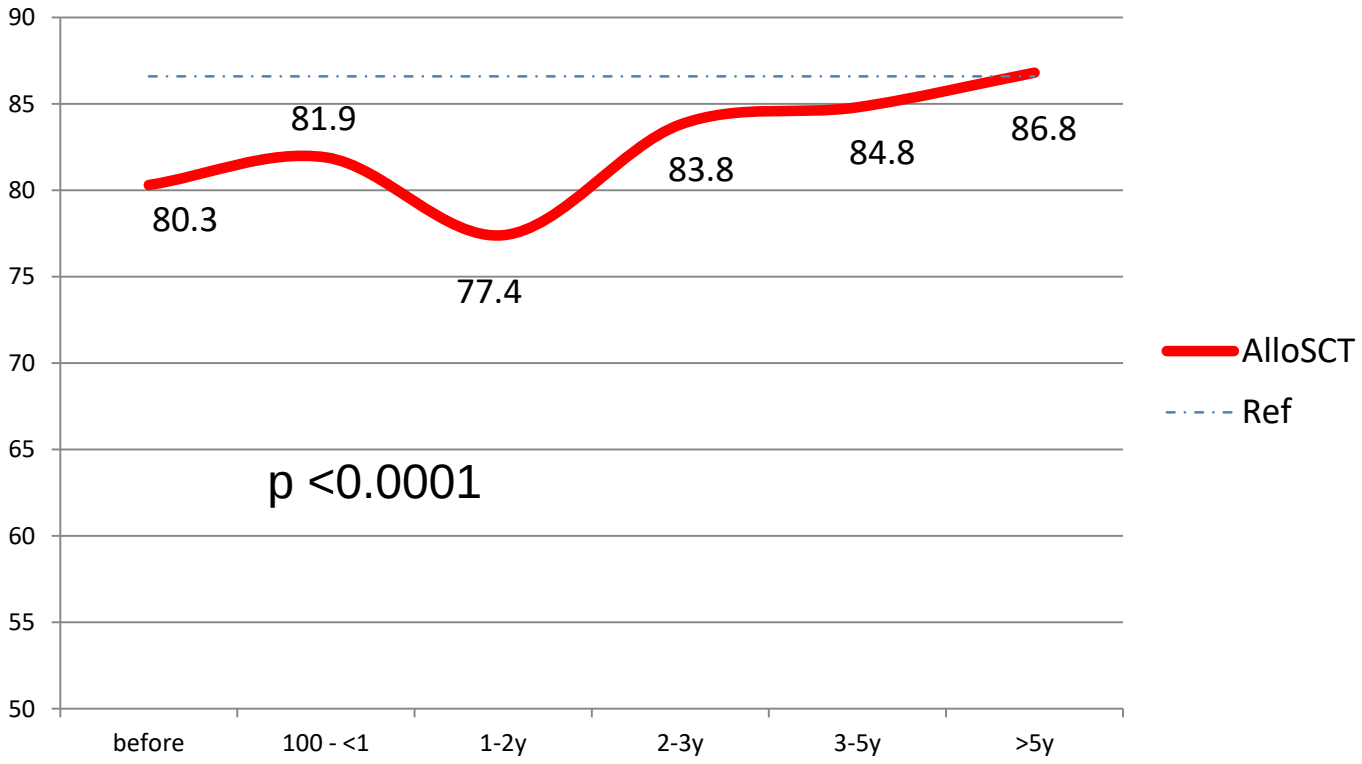
[+] no of pts for relapse: AlloSCT 433, ASCT 662

Cohort comparison

		Study cohort		Control cohort		
Parametr		n	%	n	%	P-value
number		1399	44,4	1755	55,6	
SCT type	**alloSCT/ASCT**	530/869	37.9/62.1	664/1091	37.8/66.2	ns
gender	**females/males**	645/754	46.1/53.9	786/969	44.8/55.2	ns
age	**median**	51.5		43.6		< 0.001
Dg AlloSCT	**ALL/AML/CML/MDS**	83/156/61/53	15.7/29.4/11.5/10.0	99/160/104/64	14.9/24.1/15.7/9.6	ns
Dg ASCT	**MM/NHL/HL/Other**	318/401/74/76	36.6/46.1/8.5/8.7	294/484/127/186	26.9/44.4/11.6/17.0	< 0.001
SCT source ASCT	**BM/PBPC**	5/652	0.8/99.2	9/1069	0.8/99.2	ns
SCT source AlloSCT	**BM/PBPC**	129/304	29.8/70.2	274/367	42.7/57.3	< 0.001
Conditioning AlloSCT	**MAC**	286	67.0	473	71.8	ns
TBI	**Yes**	151	10.8	186	10.9	ns
Donor	**Sibling/UD**	174/295	37.1/66.9	279/385	42.0/58.0	ns
Acute GVHD	**yes**	189	44.5	268	41.6	ns
Chronic GVHD	**Yes**	164	37.9	191	28.8	0.002
Relapse	**yes**	209	19,1	329	18.7	ns

Results – FACT-G Allo SCT

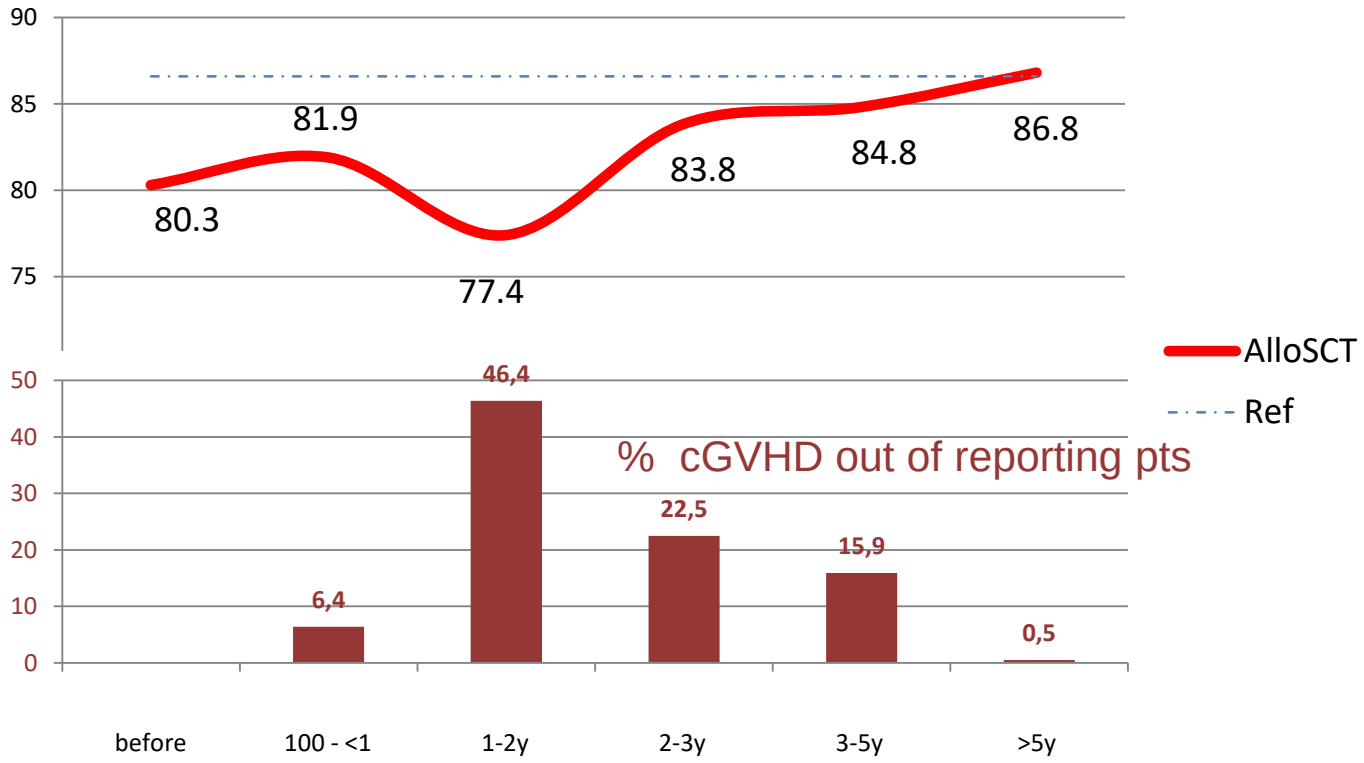
(n = 504)



n	97	57	54	30	76	190
mean score	80.3	81.9	77.4	83.8	84.8	86.8

Results – FACT-G Allo SCT

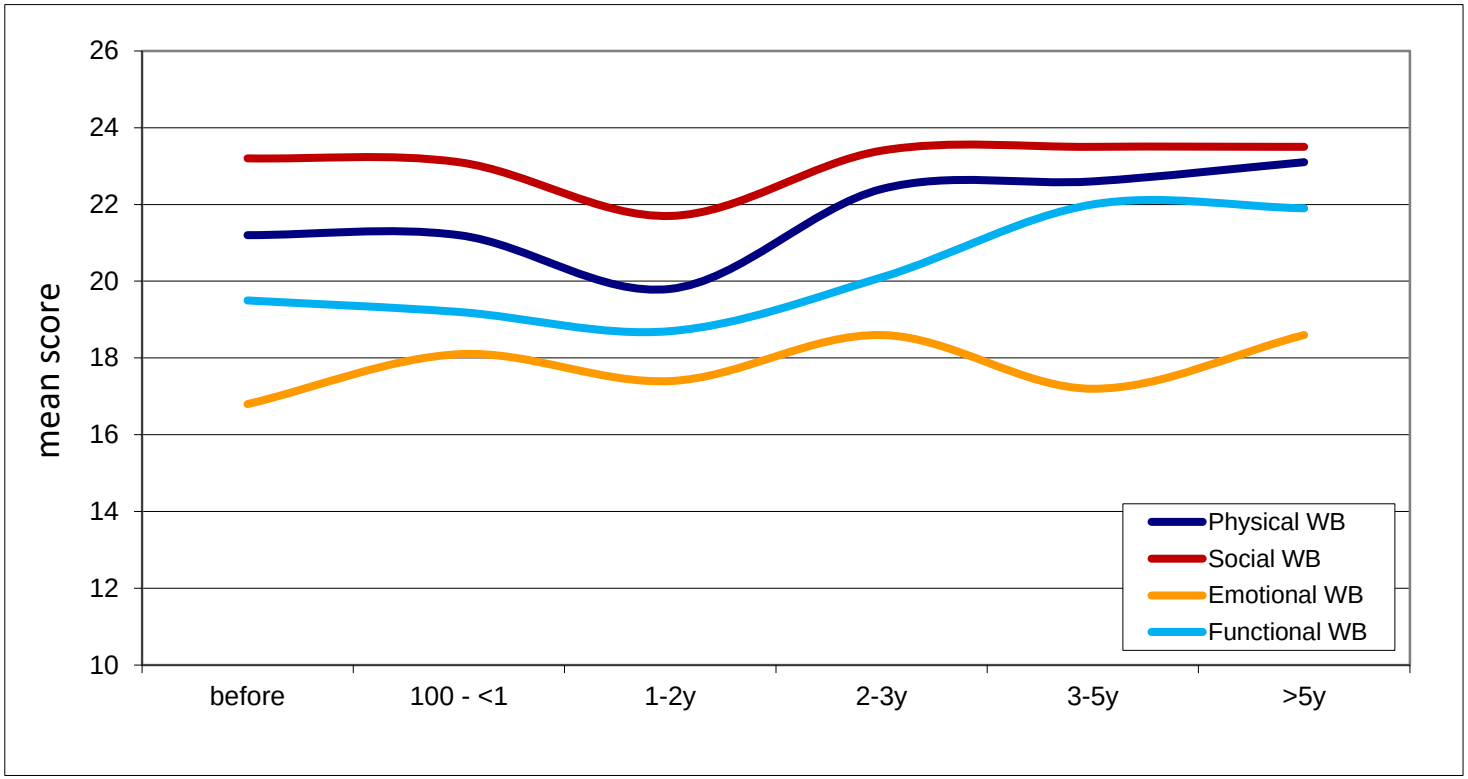
(n = 504)



n	97	57	54	30	76	190
mean score	80.3	81.9	77.4	83.8	84.8	86.8

Results – FACT-G Allo SCT

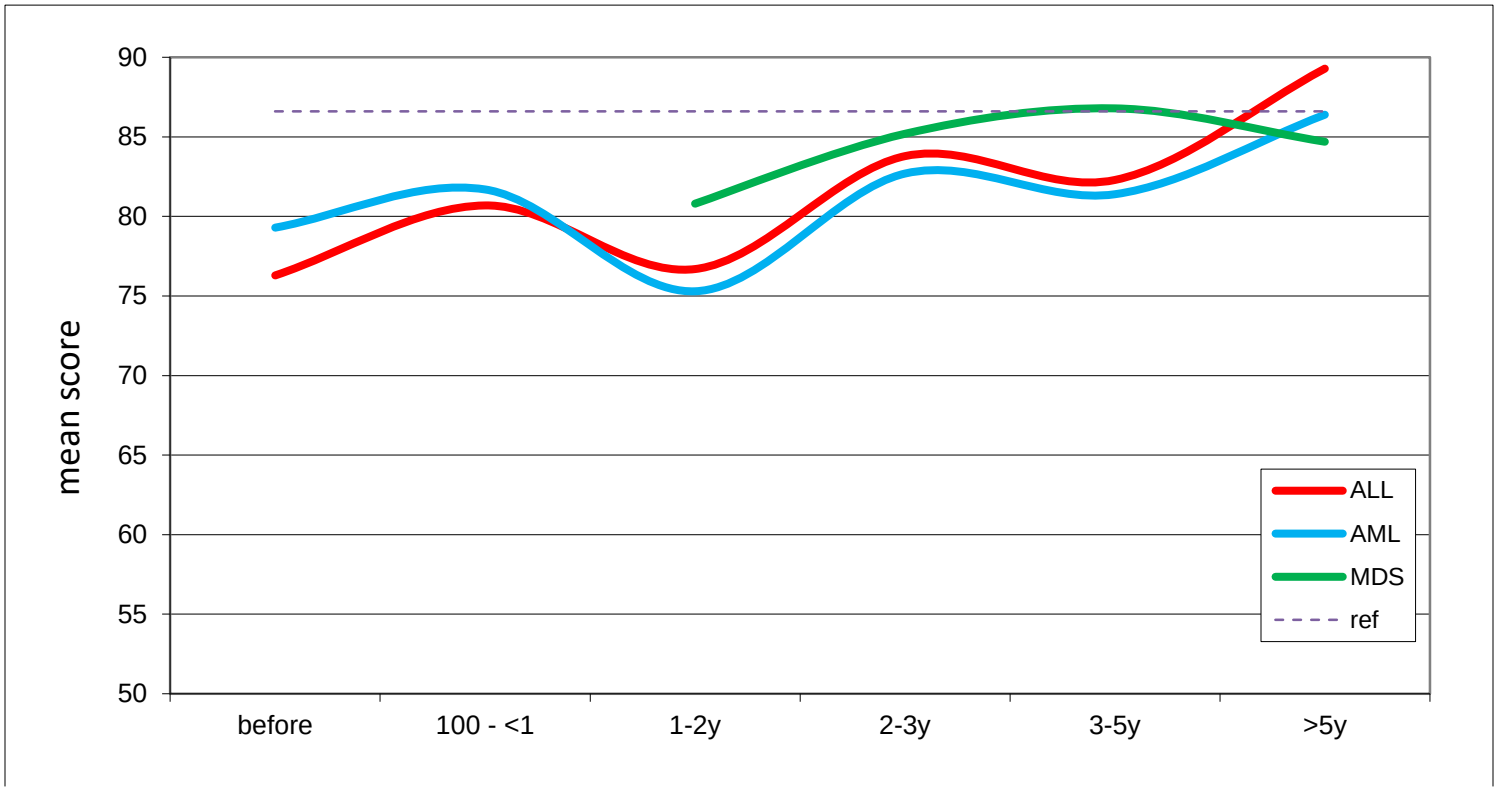
(evaluated subgroups)



	n						p
Physical WB	529	21,2	21,2	19,8	22,4	22,6	23,1	**< 0.001**
Social WB	524	23,2	23,1	21,7	23,4	23,5	23,5	**ns**
Emotional WB	514	16,8	18,1	17,4	18,6	17,2	18,6	**< 0.01**
Functional WB	521	19,5	19,2	18,7	20,1	22	21,9	**< 0.000001**

Results – FACT-G Allo SCT

AML, ALL , MDS, CML

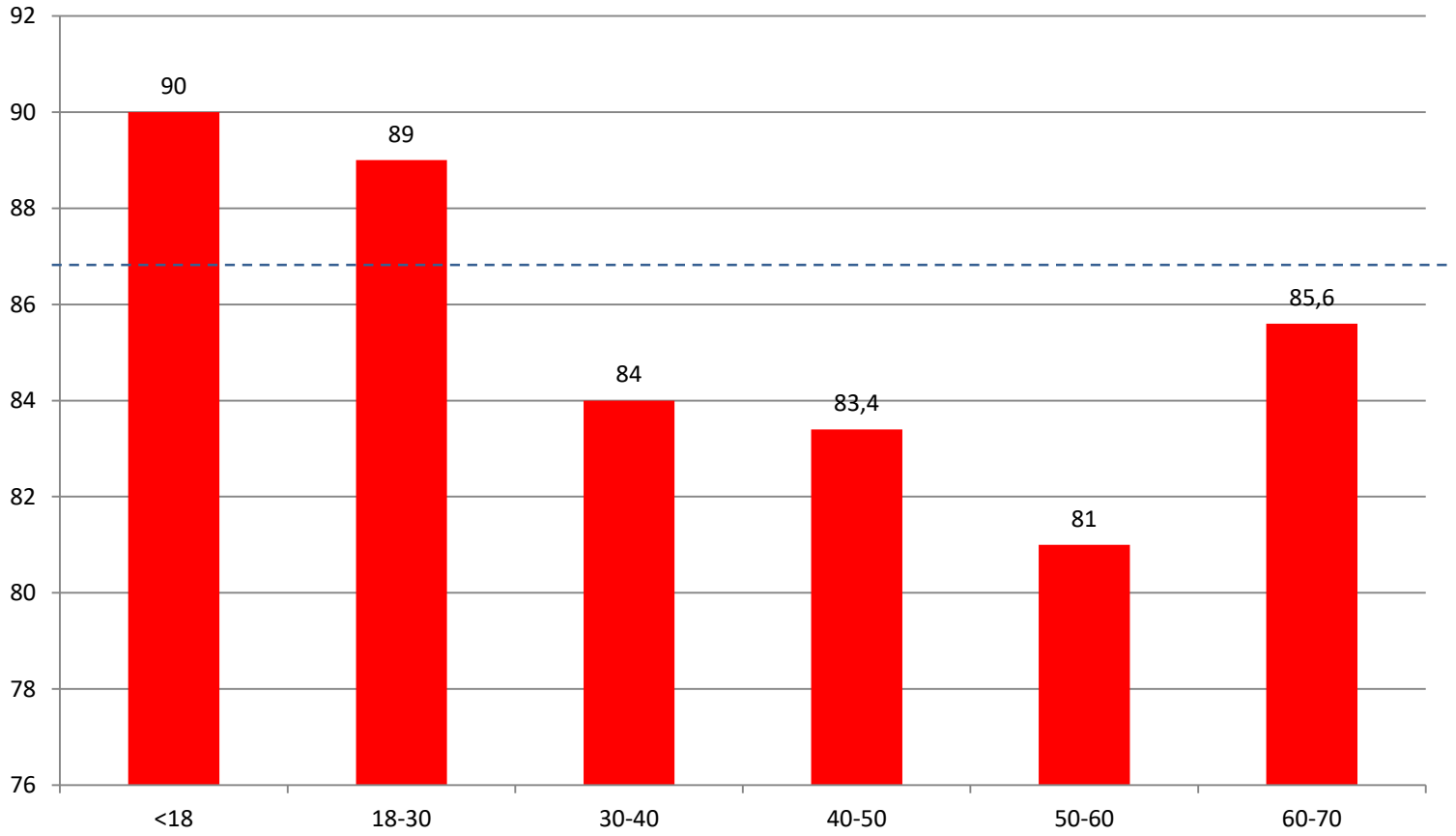


	n							p
ALL	80	76.3	80.7	76.7	83.8	82.3	89.3	0.02
AML	153	79.3	81.7	75.3	82.7	81.4	86.4	ns
MDS	47			80.8	85.2	86.8	84.7	ns
CML	58						86.0	

Factors affecting FACT-G in AlloSCT

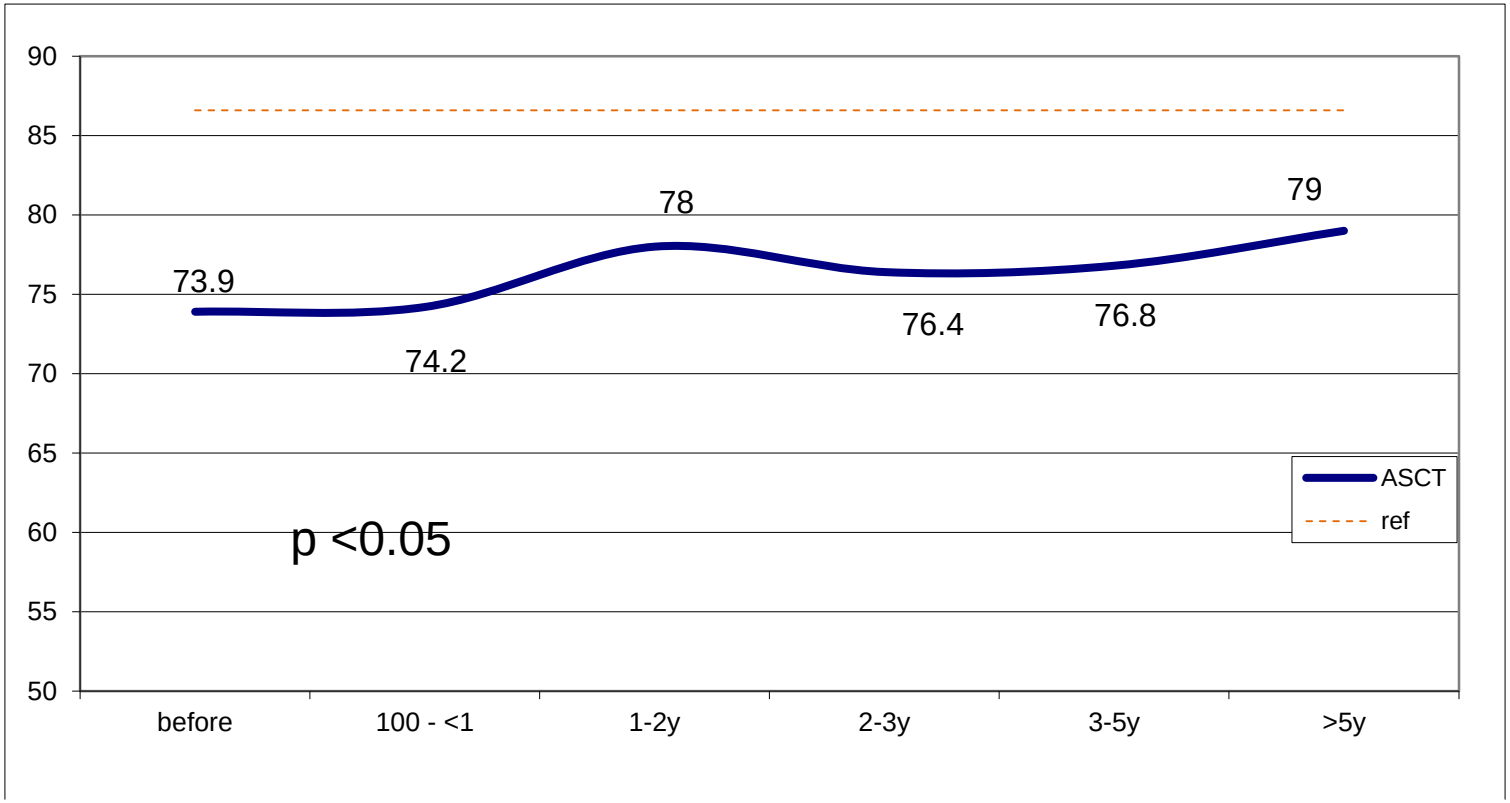
parametr	p	
gender	ns	
age	< 0.01	PWB, FWB
Dg	ns	
Dg-SCT interval	ns	
donor - Sibling	<0.05	PWB, SWB
RIC/MAC	ns	
cGVHD	<0.005	PWB, FWB
aGVH	<0.05	PWB, SWB
Relapse	0.065	PWB

Age and FACT-G in AlloSCT long-term survivors



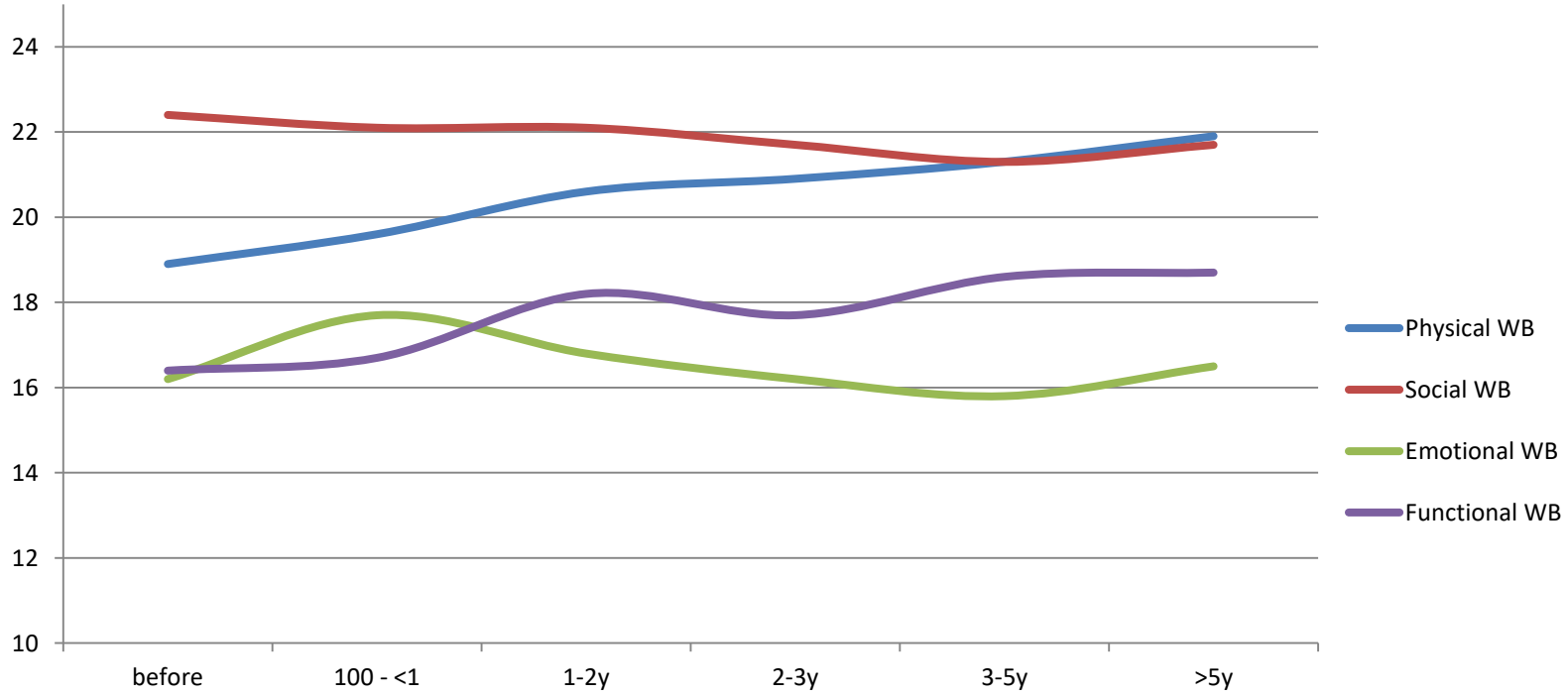
Results – FACT-G auto SCT

(n = 836)



n	200	72	90	63	139	272	p
ASCT	73.9	74.2	78	76.4	76.8	79	< 0.05

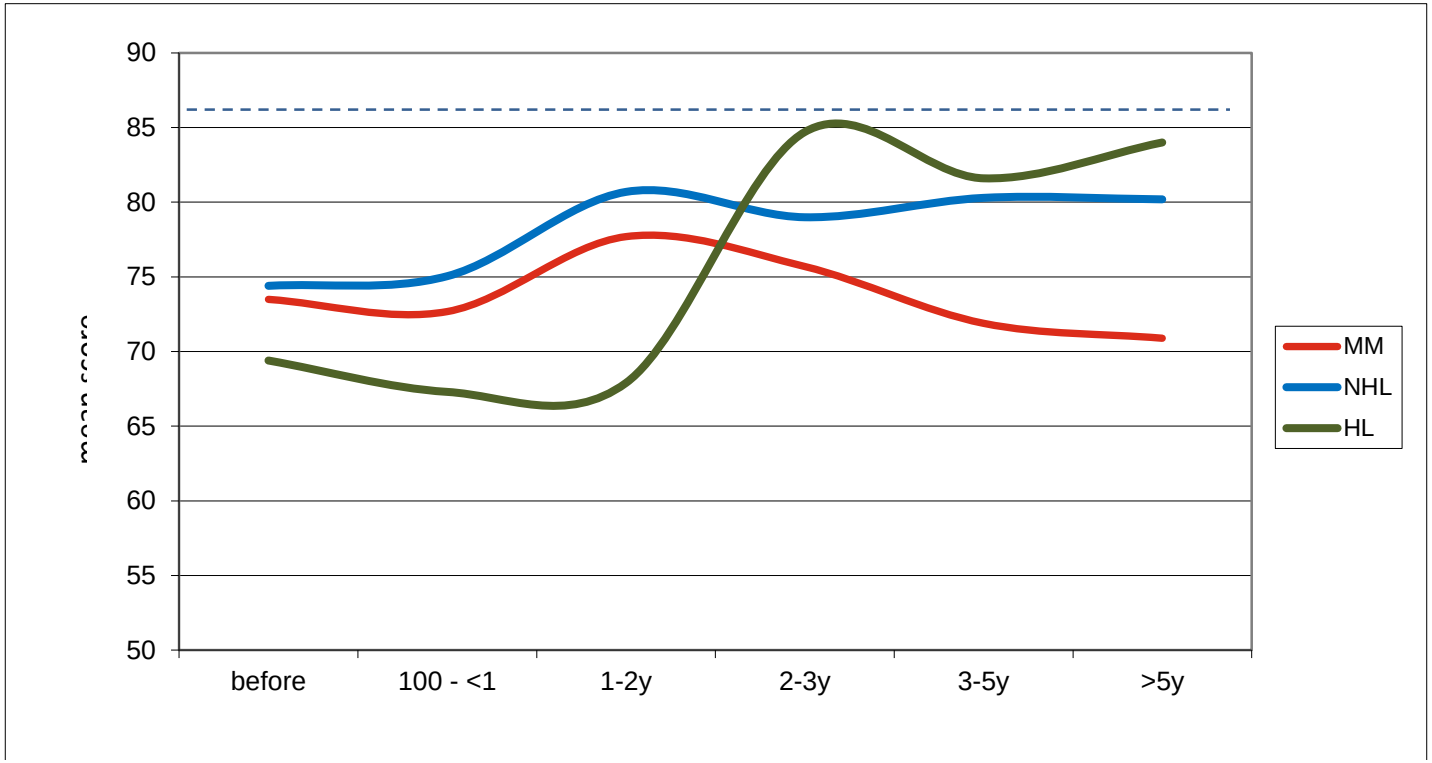
Results – FACT-G auto SCT PWB, SWB, EWB, FWB



	n						p
Physical WB	863	18.9	19.6	20.6	20.9	21.3	21.9	**< 0.000001**
Social WB	860	22.4	22.1	22.1	21.7	21.3	21.7	**ns**
Emotional WB	846	16.2	17.7	16.8	16.2	15.8	16.5	**ns**
Functional WB	854	16.4	16.7	18.2	17.7	18.6	18.7	**< 0.0005**

Results – FACT-G auto SCT

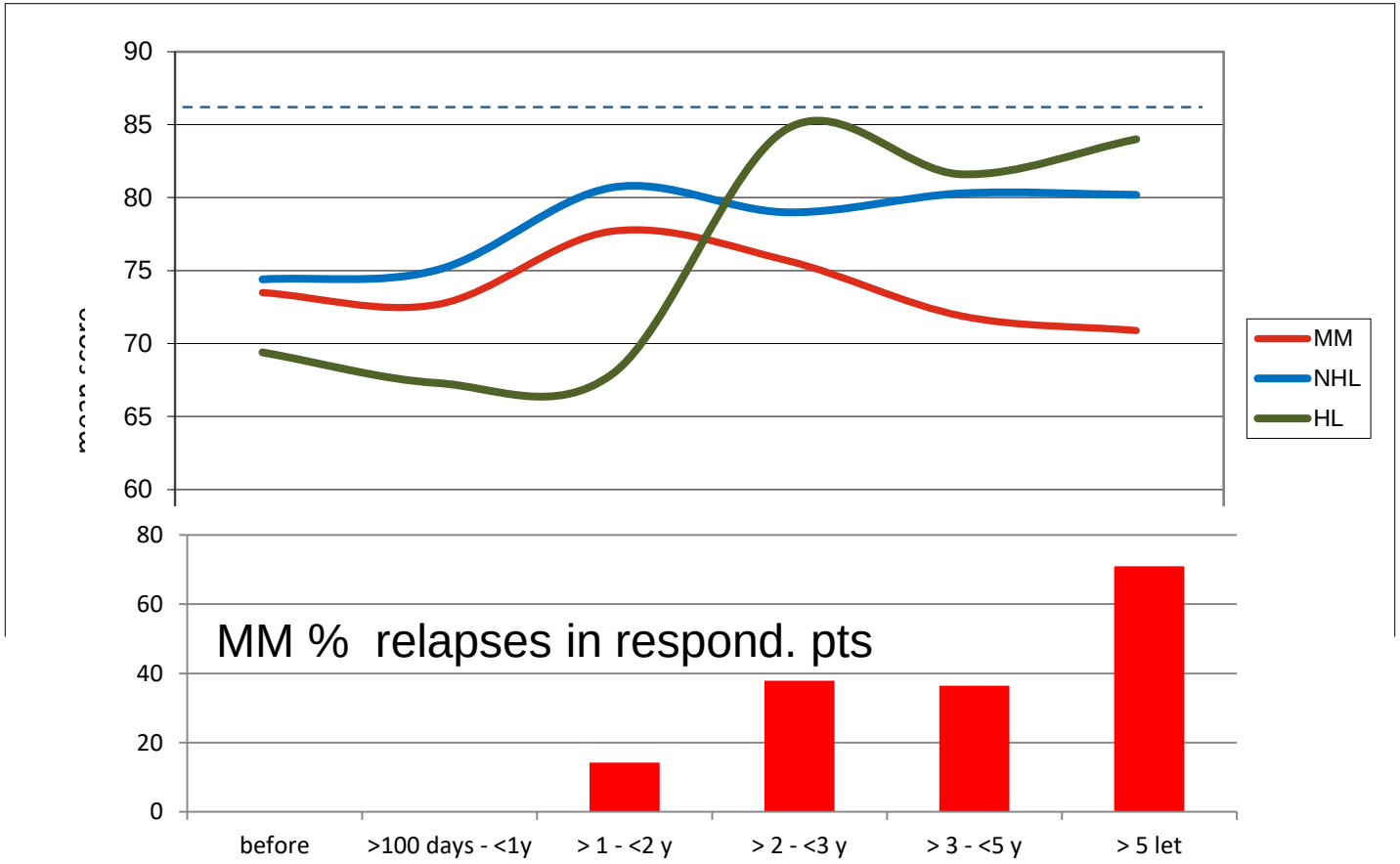
MM, NHL and HL (n = 759)



	n						p
MM	303	73.5	72.7	77.7	75.7	71.9	70.9	**ns**
NHL	387	74.4	75.0	80.7	79.0	80.3	80.2	**<0.05**
HL	69	69.4	67.3	67.9	84.7	81.6	84.0	**<0.05**

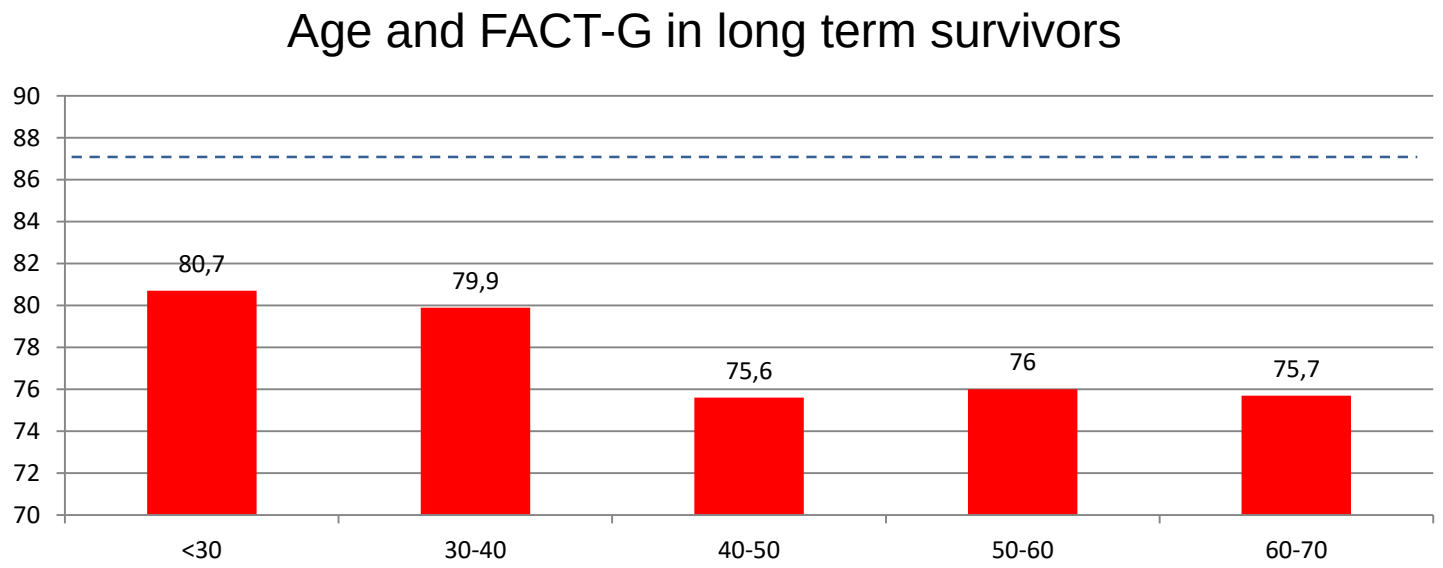
Results – FACT-G auto SCT

MM, NHL and HL (n = 759)

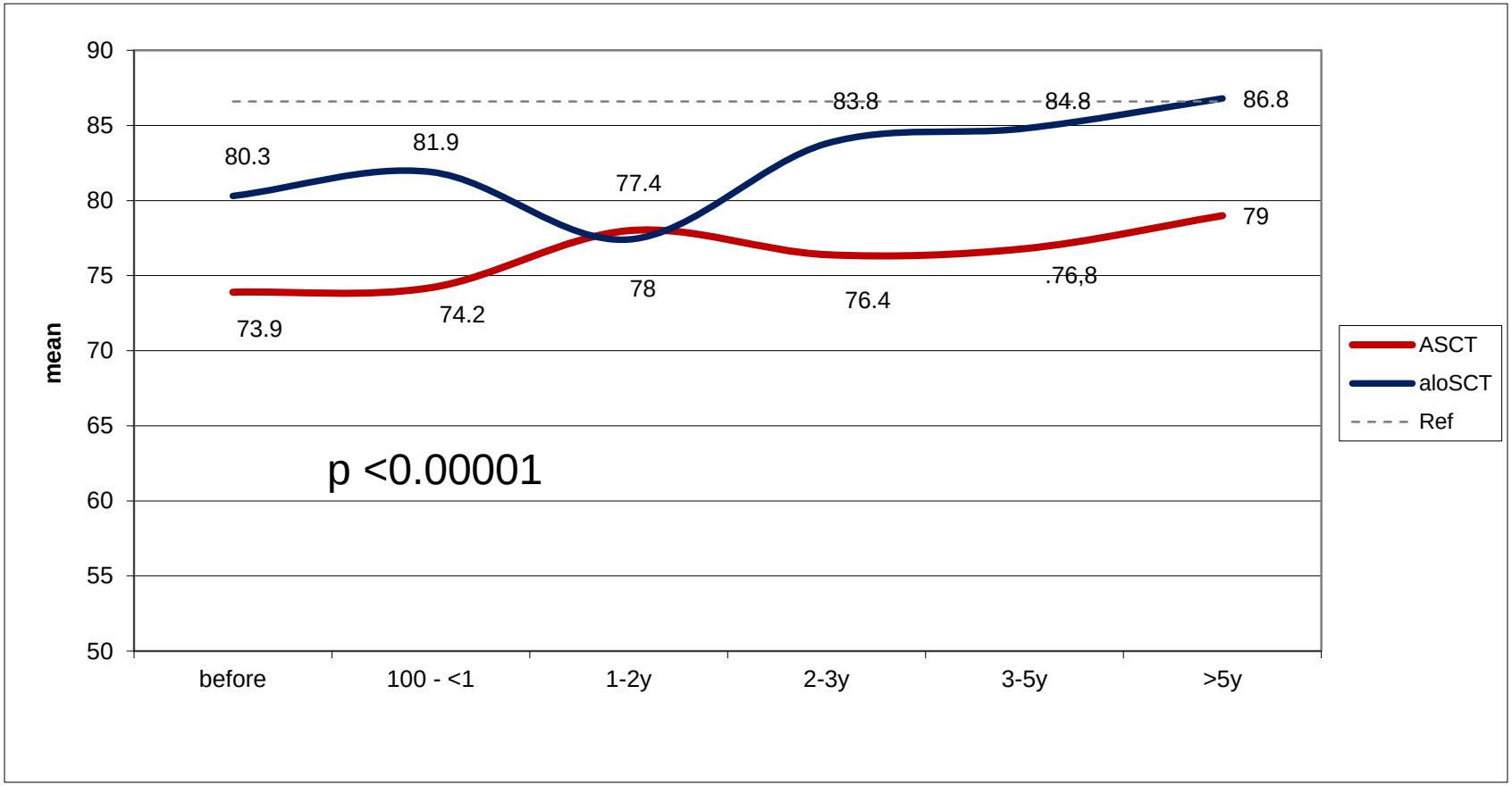


Factors affecting FACT-G in ASCT

parametr	p	
gender	ns	SWB p<0.05, EWB p<0.005
age	< 0.01	PWB, EWB, FWB
Dg	< 0.00001	PWB, EWB, FWB
Dg-SCT interval	ns	
Relapse	<0.05	PWB, EWB, FWB



FACT-G according to SCT type



Conclusions

- Both in AlloSCT and ASCT is QoL improving in long term survivors, AlloSCT reported similar QoL as reference population
- Age significantly influences QoL in both cohorts
- Chronic GVHD has siginficant impact on QoL
- QoL differs significantly according to Dg in ASCT but not AlloSCT

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