Fig. 1

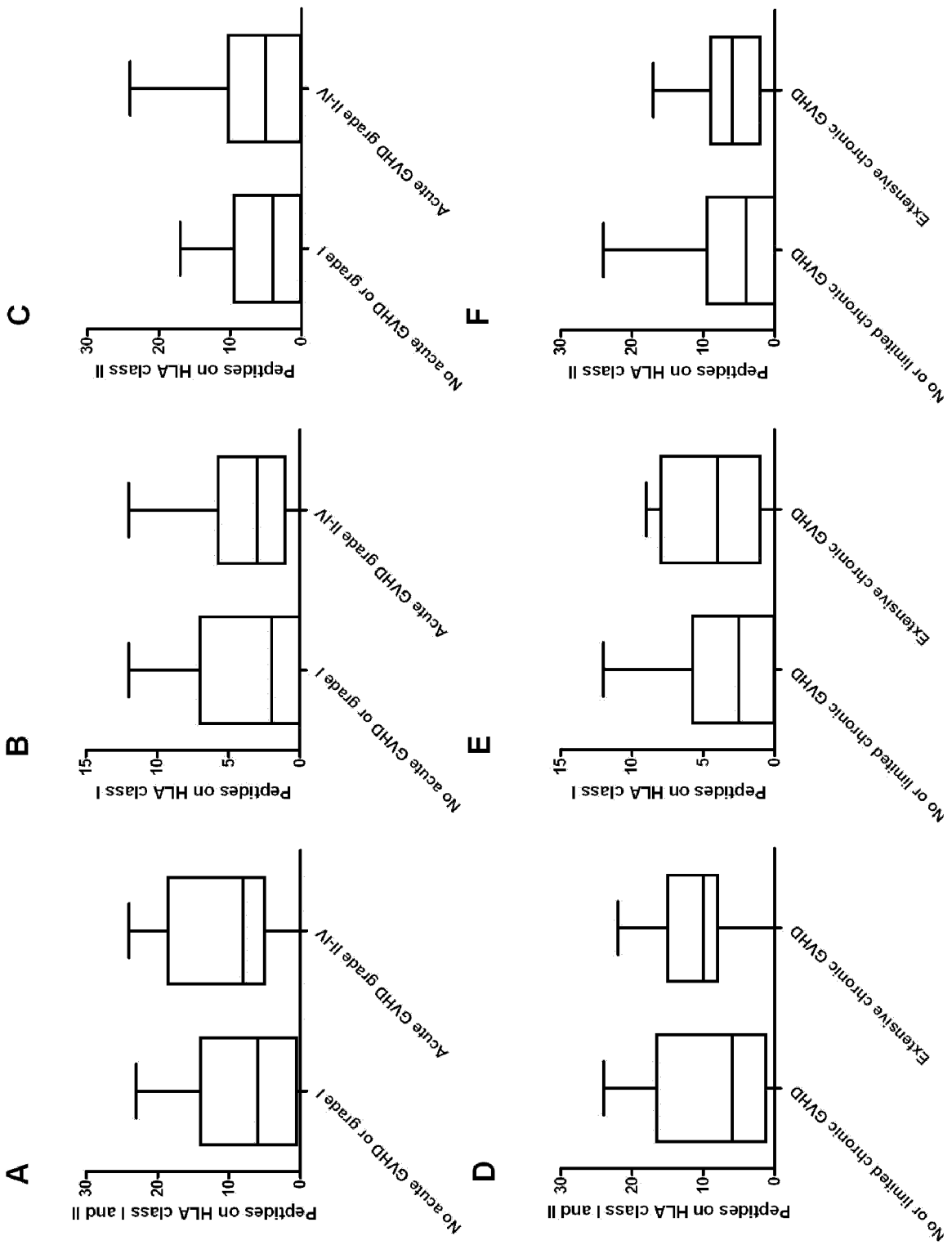

A
Peptides on HLA class I and II
30
20
10
0
No acute GVHD or grade I
Acute GVHD grade II-IV
B
Peptides on HLA class I
15
10
5
0
No acute GVHD or grade I
Acute GVHD grade II-IV
C
Peptides on HLA class II
30
20
10
0
No acute GVHD or grade I
Acute GVHD grade II-IV
D
Peptides on HLA class I and II
30
20
10
0
No or limited chronic GVHD
Extensive chronic GVHD
E
Peptides on HLA class I
15
10
5
0
No or limited chronic GVHD
Extensive chronic GVHD
F
Peptides on HLA class II
30
20
10
0
No or limited chronic GVHD
Extensive chronic GVHD

Fig. 1 (cont.)

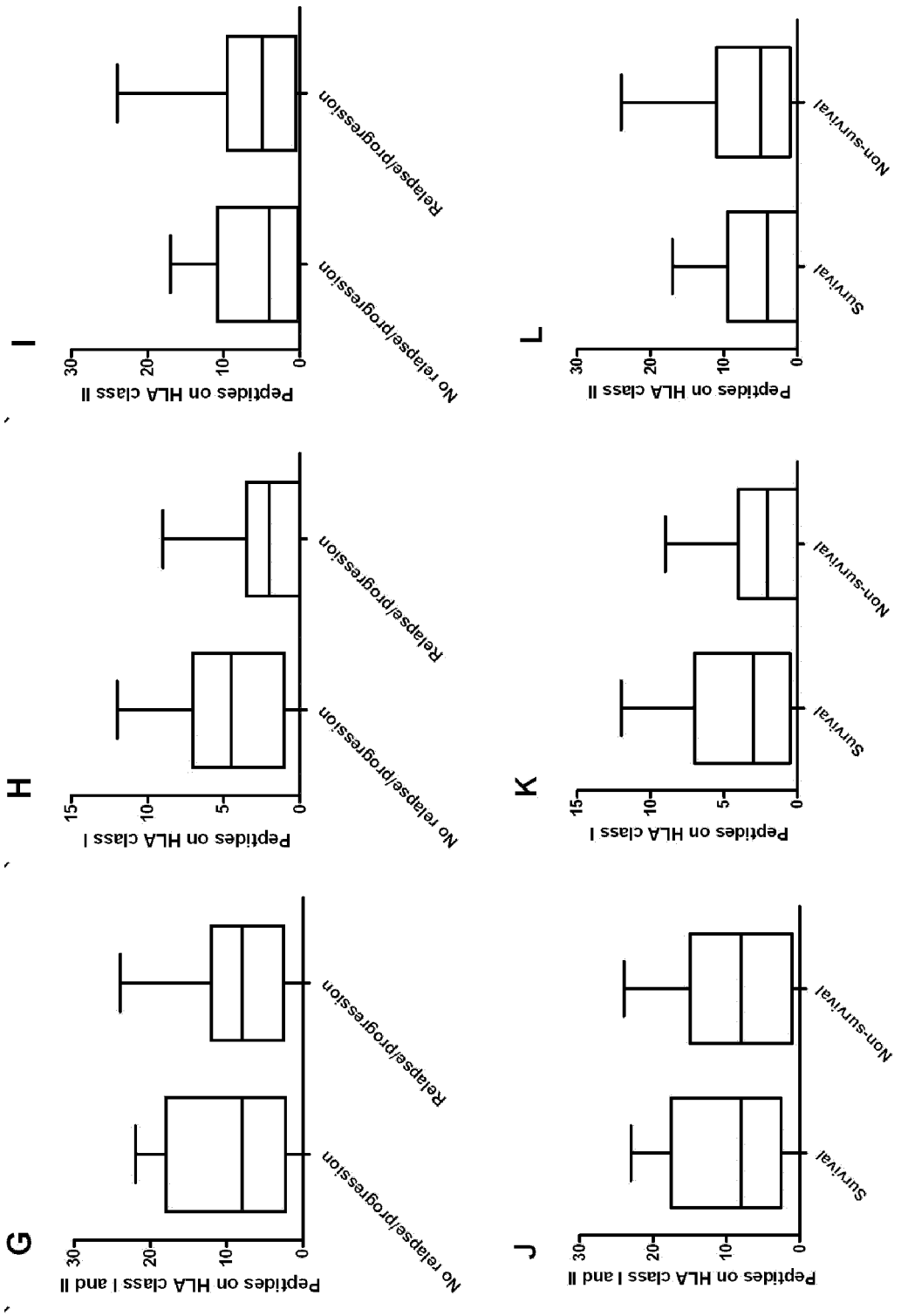

G
Peptides on HLA class I and II
0
10
20
30
No relapse/progression
Relapse/progression
H
Peptides on HLA class I
0
5
10
15
No relapse/progression
Relapse/progression
I
Peptides on HLA class II
0
10
20
30
No relapse/progression
Relapse/progression
J
Peptides on HLA class I and II
0
10
20
30
Survival
Non-survival
K
Peptides on HLA class I
0
5
10
15
Survival
Non-survival
L
Peptides on HLA class II
0
10
20
30
Survival
Non-survival

Fig. 2

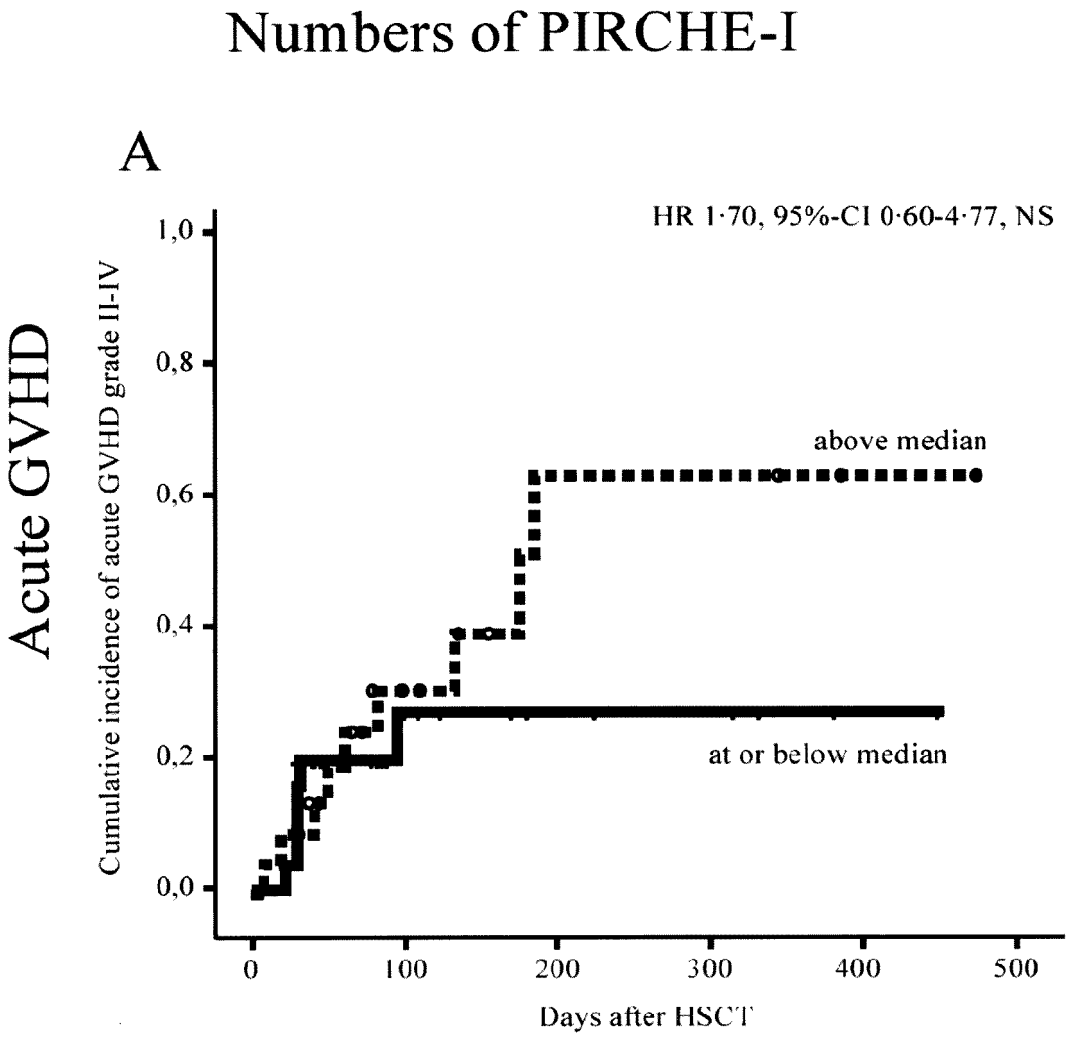

Numbers of PIRCHE-I
A
HR 1·70, 95%-CI 0·60-4·77, NS
Acute GVHD
Cumulative incidence of acute GVHD grade II-IV
1,0
0,8
0,6
0,4
0,2
0,0
above median
at or below median
0
100
200
300
400
500
Days after HSCT

Fig. 2 (cont.)

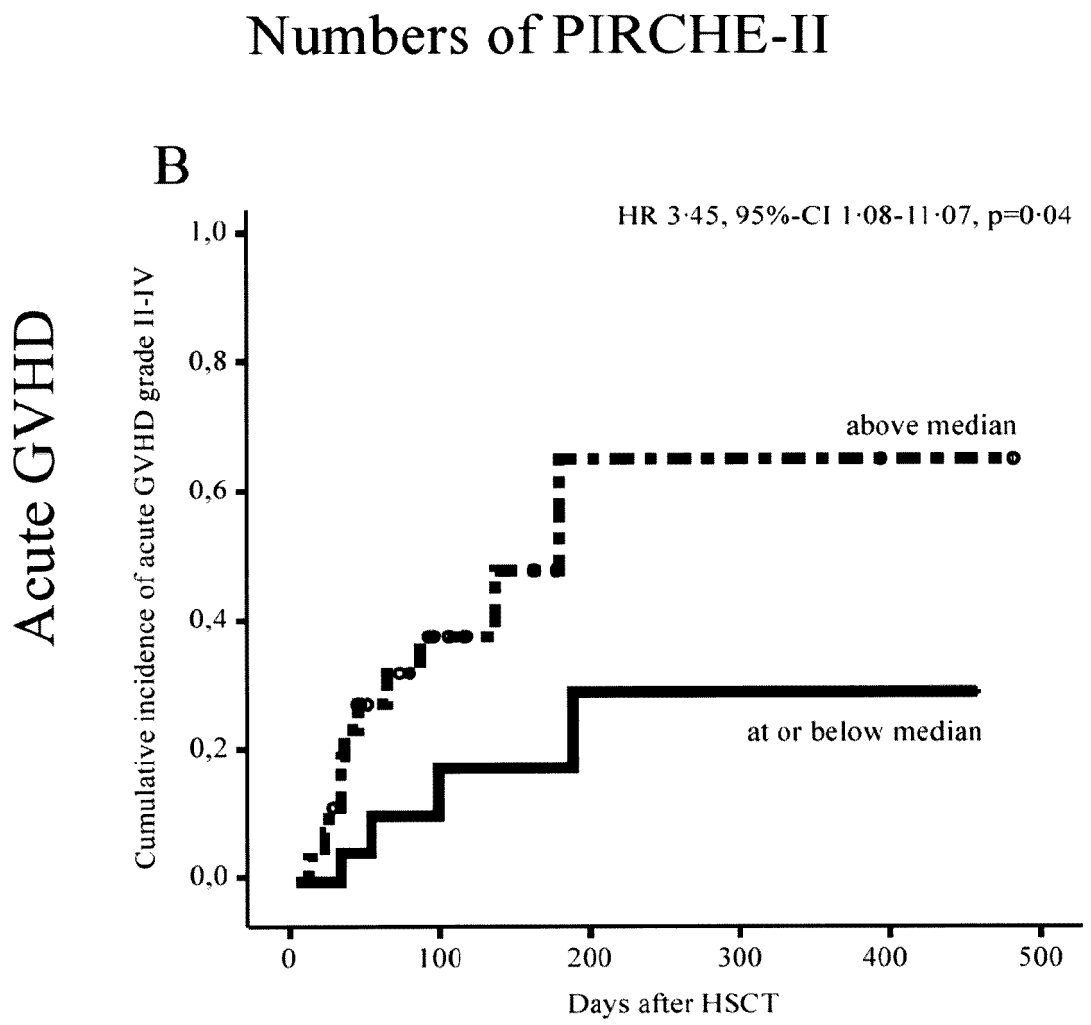

Numbers of PIRCHE-II
B
Acute GVHD
Cumulative incidence of acute GVHD grade II-IV
HR 3·45, 95%-CI 1·08-11·07, p=0·04
above median
at or below median
1,0
0,8
0,6
0,4
0,2
0,0
0
100
200
300
400
500
Days after HSCT

Fig. 2 (cont.)

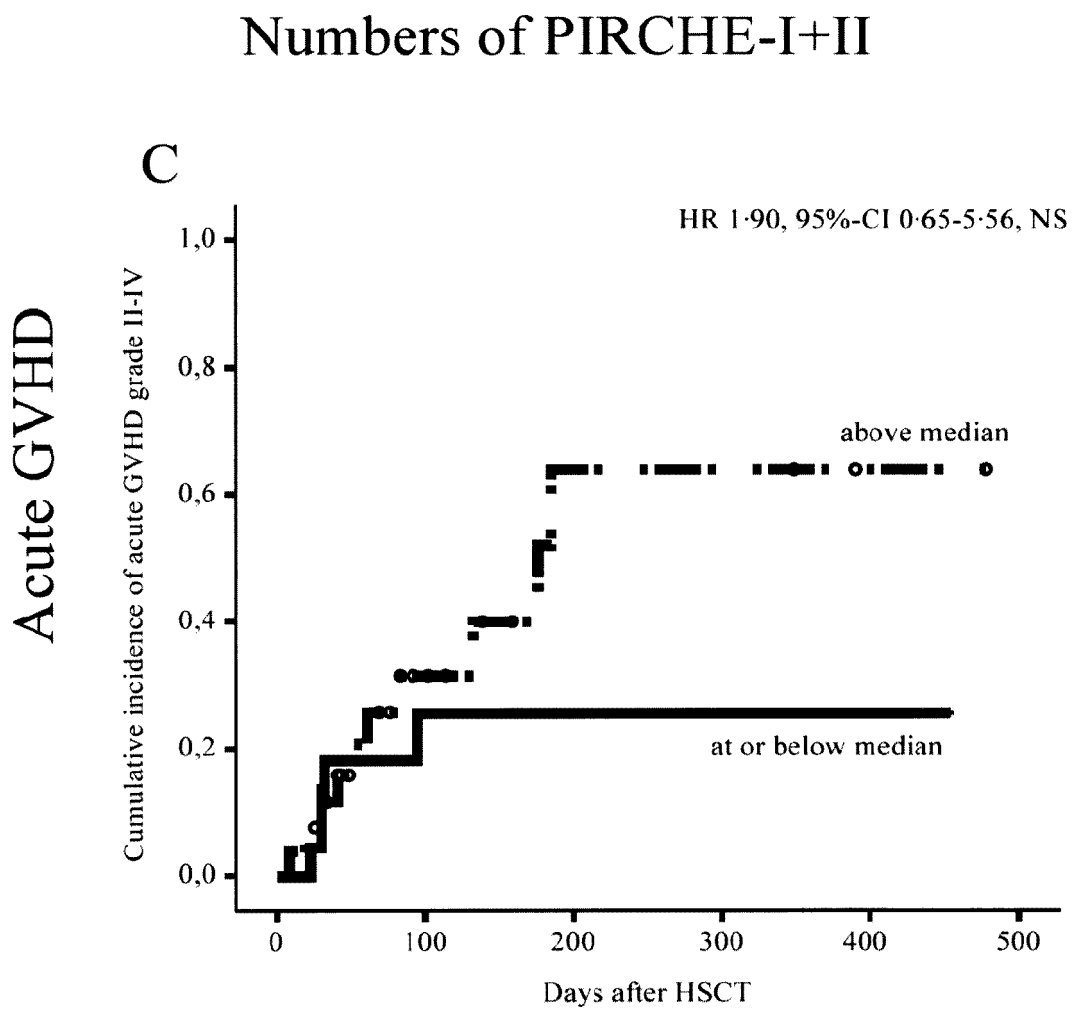

Numbers of PIRCHE-I+II
C
Acute GVHD
Cumulative incidence of acute GVHD grade II-IV
HR 1·90, 95%-CI 0·65-5·56, NS
above median
at or below median
1,0
0,8
0,6
0,4
0,2
0,0
0
100
200
300
400
500
Days after HSCT

Fig. 2 (cont.)

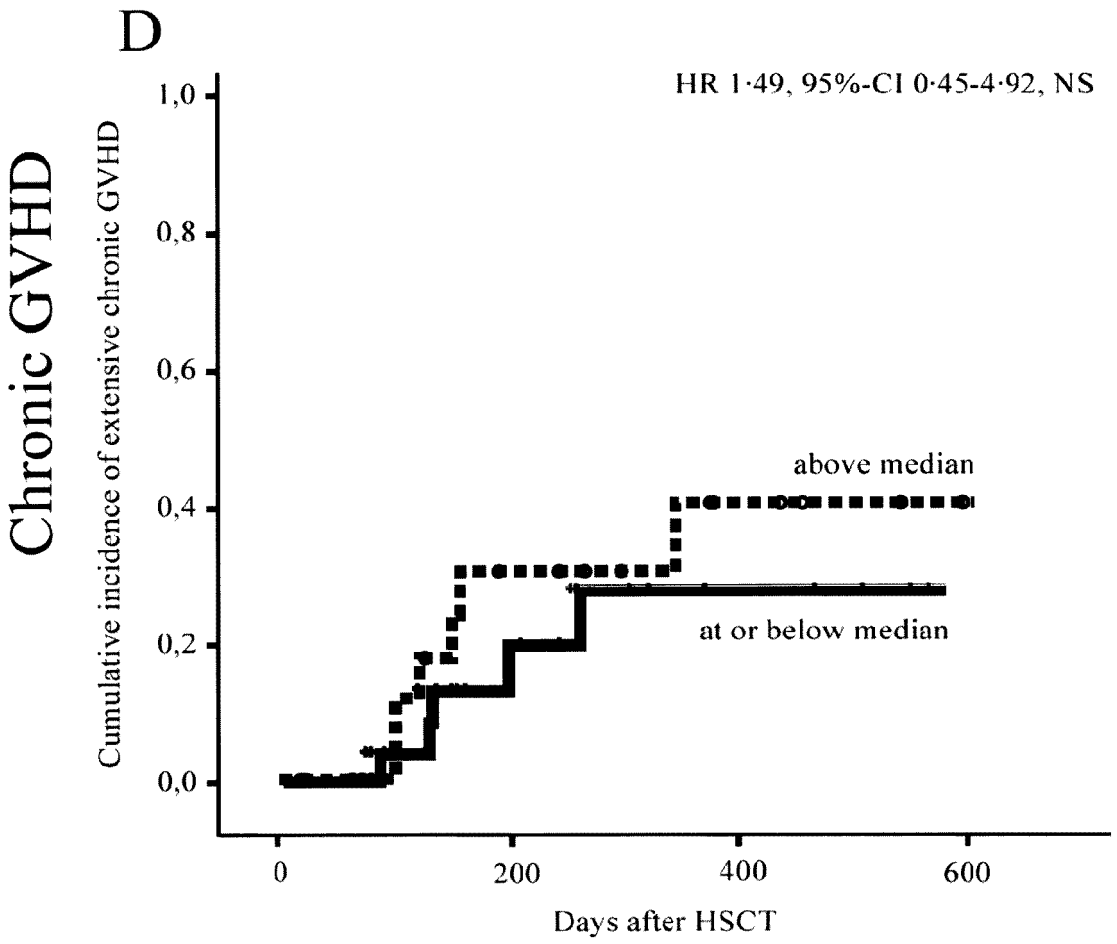

Numbers of PIRCHE-I
D
Chronic GVHD
Cumulative incidence of extensive chronic GVHD
HR 1·49, 95%-CI 0·45-4·92, NS
above median
at or below median
1,0
0,8
0,6
0,4
0,2
0,0
0
200
400
600
Days after HSCT

Fig. 2 (cont.)

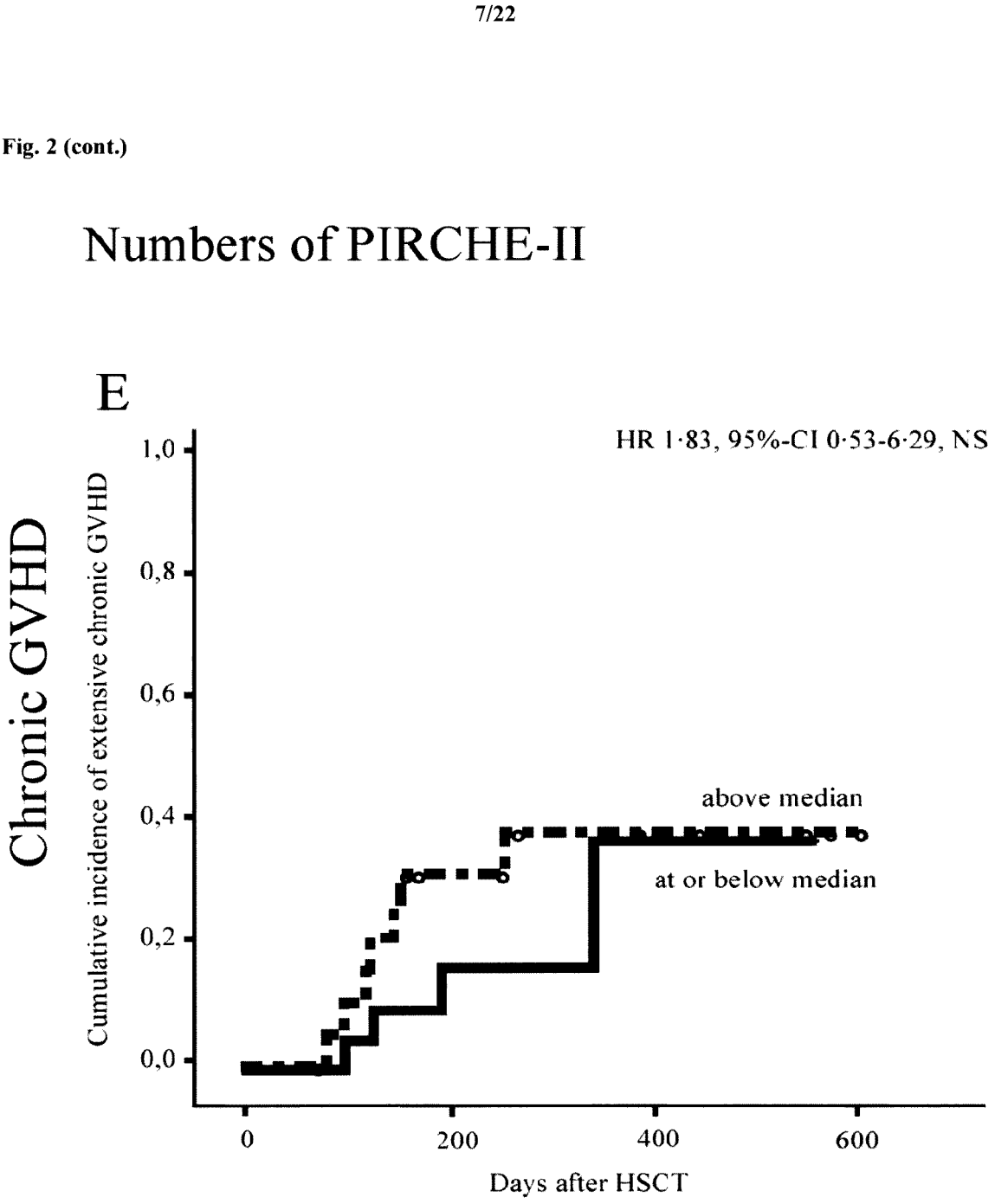

Numbers of PIRCHE-II
E
Chronic GVHD
Cumulative incidence of extensive chronic GVHD
HR 1·83, 95%-CI 0·53-6·29, NS
above median
at or below median
1,0
0,8
0,6
0,4
0,2
0,0
0
200
400
600
Days after HSCT

Fig. 2 (cont.)

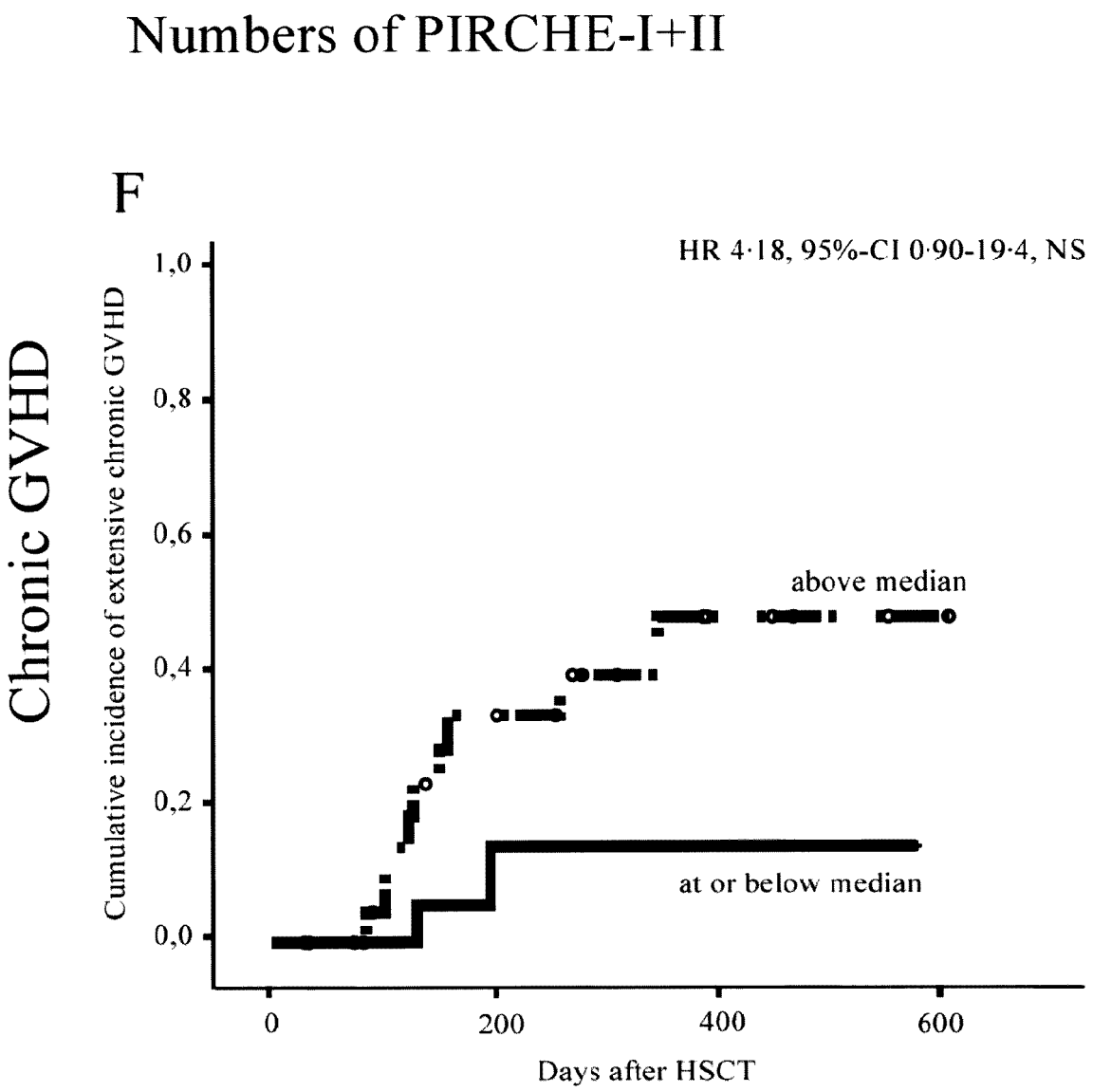

Numbers of PIRCHE-I+II
F
Chronic GVHD
Cumulative incidence of extensive chronic GVHD
HR 4·18, 95%-CI 0·90-19·4, NS
1,0
0,8
0,6
0,4
0,2
0,0
above median
at or below median
0
200
400
600
Days after HSCT

Fig. 2 (cont.)

Numbers of PIRCHE-I

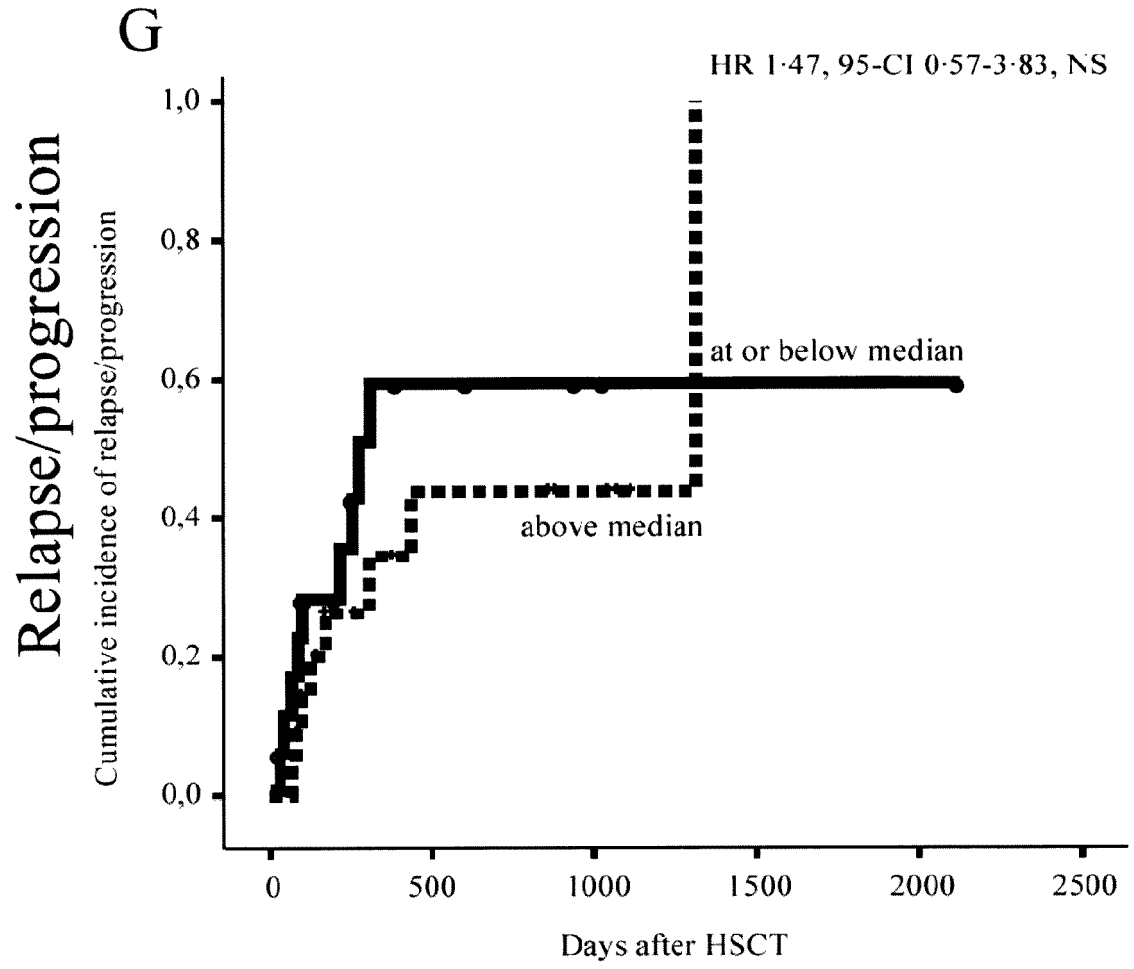


Fig. 2 (cont.)

Numbers of PIRCHE-II

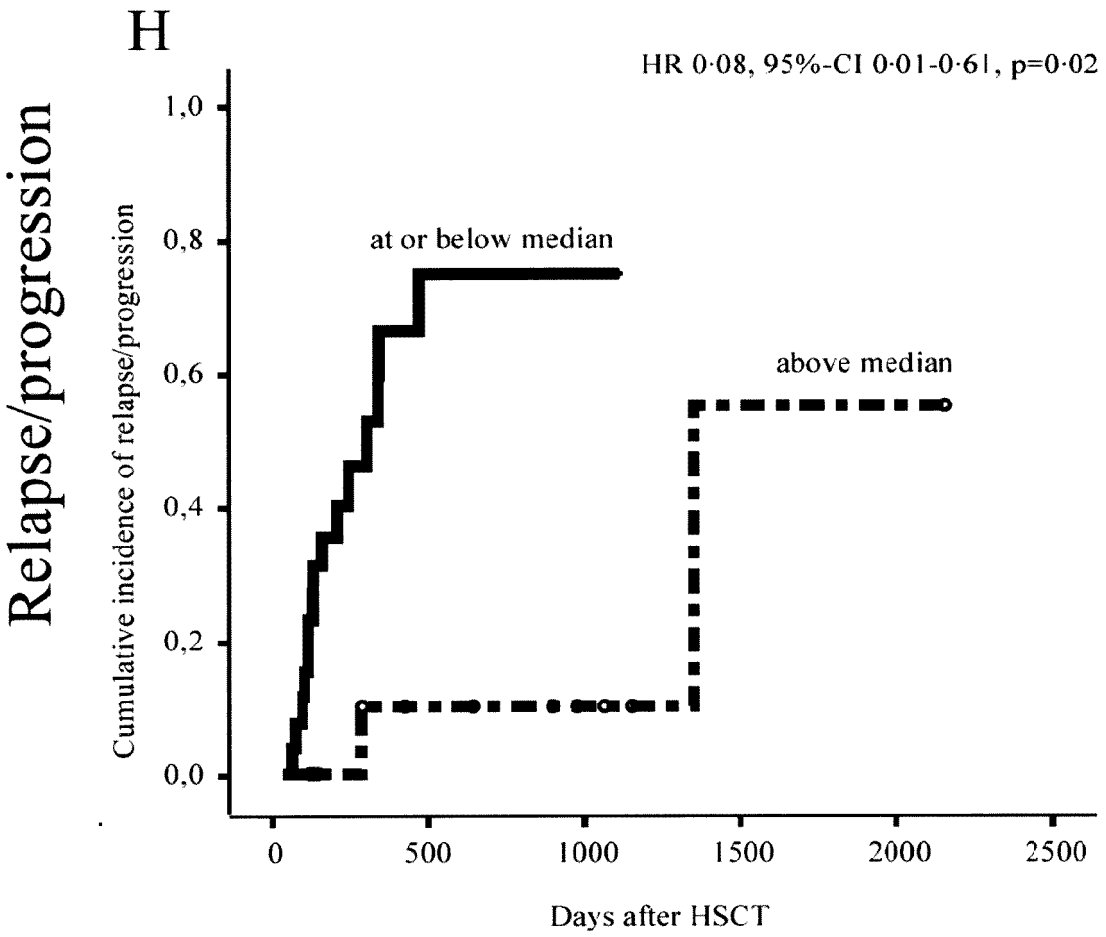


Fig. 2 (cont.)

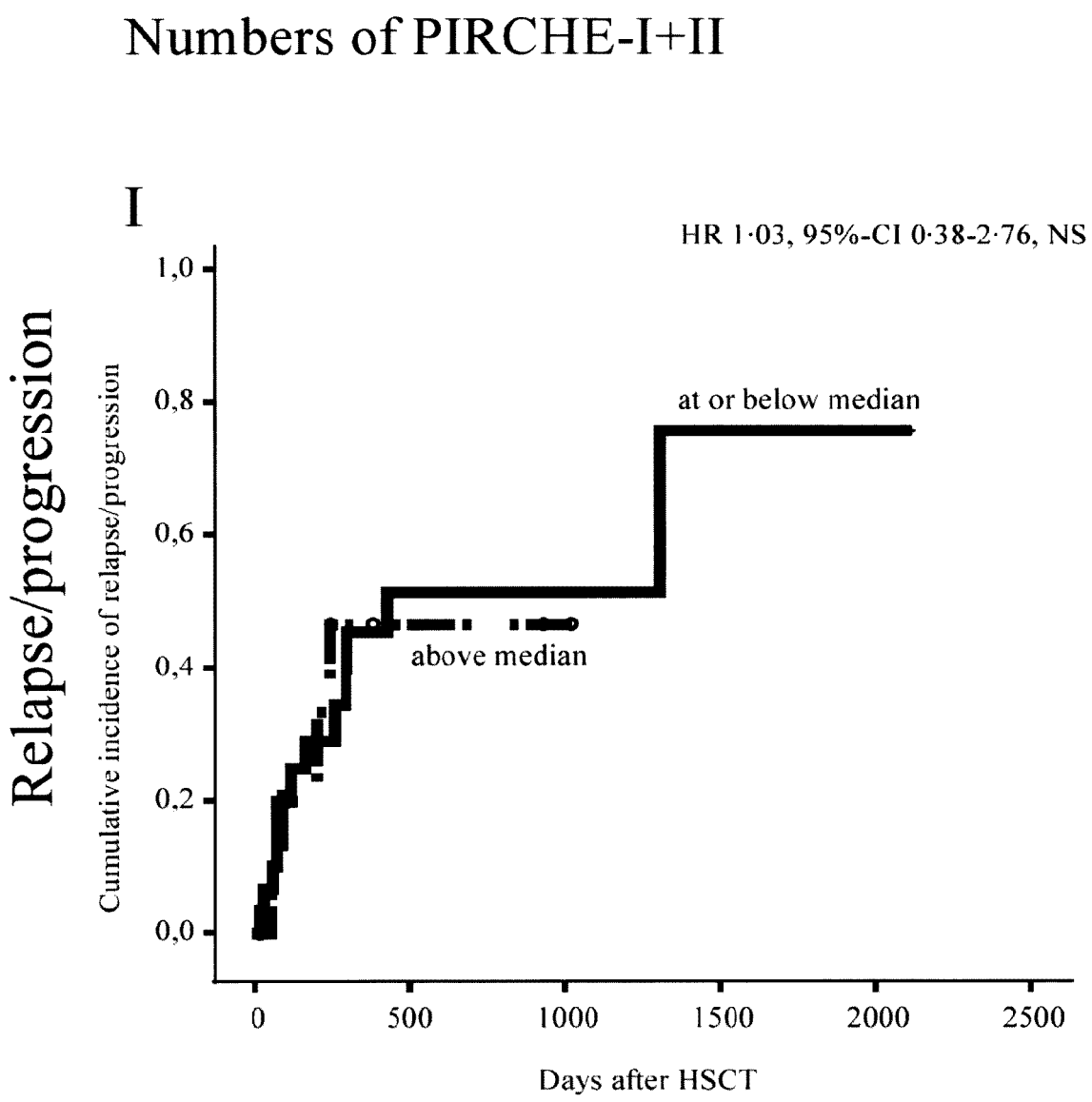

Numbers of PIRCHE-I+II
I
HR 1·03, 95%-CI 0·38-2·76, NS
Relapse/progression
Cumulative incidence of relapse/progression
1,0
0,8
0,6
0,4
0,2
0,0
at or below median
above median
0
500
1000
1500
2000
2500
Days after HSCT

Fig. 3

nr.	Age of recipient [years]	Gender recipient/donor	time till ectomy [months]	HLA class I mismatch	HLA-DRB1 typing of recipient	Immunogenic alleles	Non-immunogenic alleles
1	26	M/F	143	A*32:01, B*15:17	DRB1*03:01, -	A*32:01, B*15:17	-
2	51	M/M	46	A*03:01, B*18:01	DRB1*03:01, -	A*03:01	B*18:01
3	48	M/F	0	A*02:01, B*41:01	DRB1*04:01, DRB1*07:01	A*02:01, B*41:01	-
4	54	M/M	0	A*01:01, A*24:02, B*39:06	DRB1*03:01, DRB1*15:01	A*01:01, A*24:02	B*39:06
5	47	M/M	10	A*03:01, B*07:02	DRB1*07:01, DRB1*13:01	B*07:02	A*03:01
6	29	M/M	2	A*02:01, B*57:01, B*49:01#	DRB1*07:01, DRB1*15:01	A*02:01, B*49:01	B*57:01
7	32	M/M	0	A*01:01, B*08:01	DRB1*04:01, DRB1*15:01	A*01:01, B*08:01	-
8	54	M/F	0	B*44:02	DRB1*04:01, DRB1*11:01	B*44:02	-
9	43	M/F	0	B*40:01	DRB1*01:01, DRB1*04:01	B*40:01	-
10	69	M/M	0	A*24:02, B*18:01, B:35:03	DRB1*04:01, DRB1*07:01,	A*24:02, B*18:01	B:35:03
11	53	M/F	0	A*03:01, B*07:02, B*15:01#	DRB1*15:01, DRB1*03:01	A*03:01, B*07:02, B*15:01	-
12	66	M/M	0	A*24:02, B*44:02, B*39:06	DRB1*04:01, DRB1*11:01	-	A*24:02, B*44:02, B*39:06
13	35	M/M	0	A*24:02, B*39:06, B*51:01	DRB1*04:01, -	A*24:02, B*39:06, B*51:01	-
14	47	M/M	101	A*02:01, B*27:05	DRB1*09:01, DRB1*15:01	A*02:01, B*27:05	-
15	59	F/M	4	A*02:01, B*51:01	DRB1*12:01, -	A*02:01	B*51:01
16	54	F/F	3	A*01:01, B*07:02	DRB1*03:01, DRB1*15:01	A*01:01, B*07:02	-
17	27	F/M	0	B*51:01	DRB1*03:01, -	B*51:01	-
18	53	F/M	0	A*01:01, A*0201, B*08:01, B44&	DRB1*08:01, DRB1*11:01	A*01:01, A*0201, B*08:01, B44	-
19	45	F/M	0	A*02:01, B*07:02	DRB1*07:01, DRB113:01#	A*02:01, B*07:02	-
20	30	F/F	0	A*32:01	DRB1*03:01,	A*32:01	-
21	17	F/F	38	B*57:01	DRB1*03:01, DRB1*13:01#	B*57:01	-

(#) No DNA available for high resolution typing. Typing has been extrapolated from the serological broad typing.
(&)No DNA available for high resolution typing. Number of eplets/peptides calculated as average of B*44:02 and B*44:03

Fig. 4

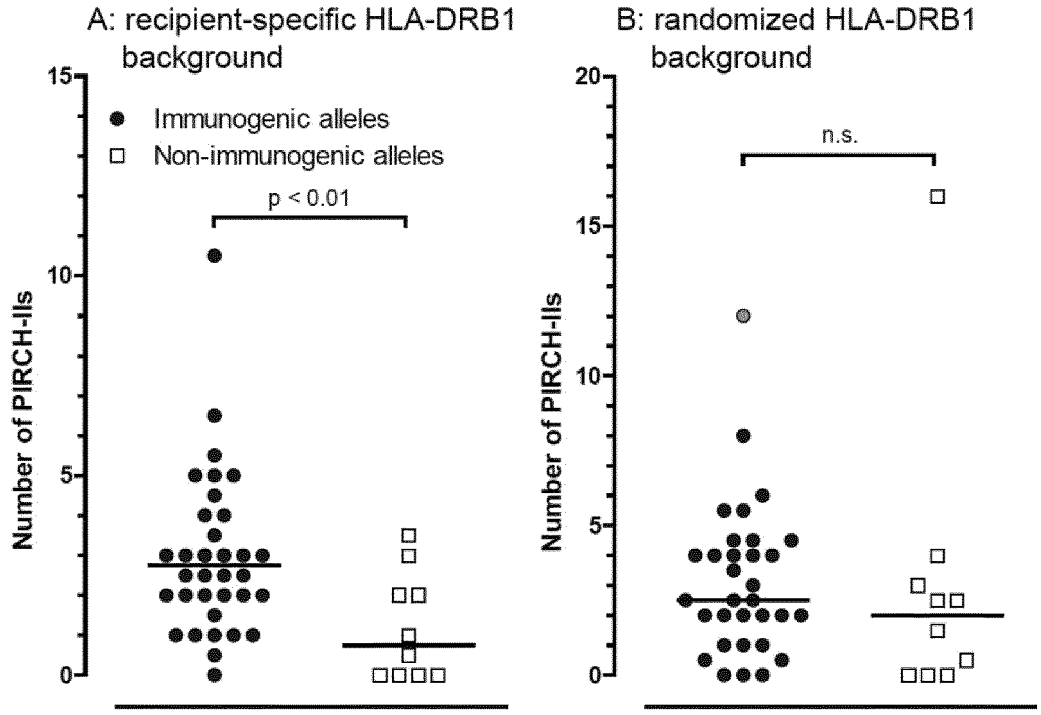

A: recipient-specific HLA-DRB1 background
Immunogenic alleles
Non-immunogenic alleles
p < 0.01
Number of PIRCH-IIs
15
10
5
0
B: randomized HLA-DRB1 background
n.s.
Number of PIRCH-IIs
20
15
10
5
0

Fig. 5

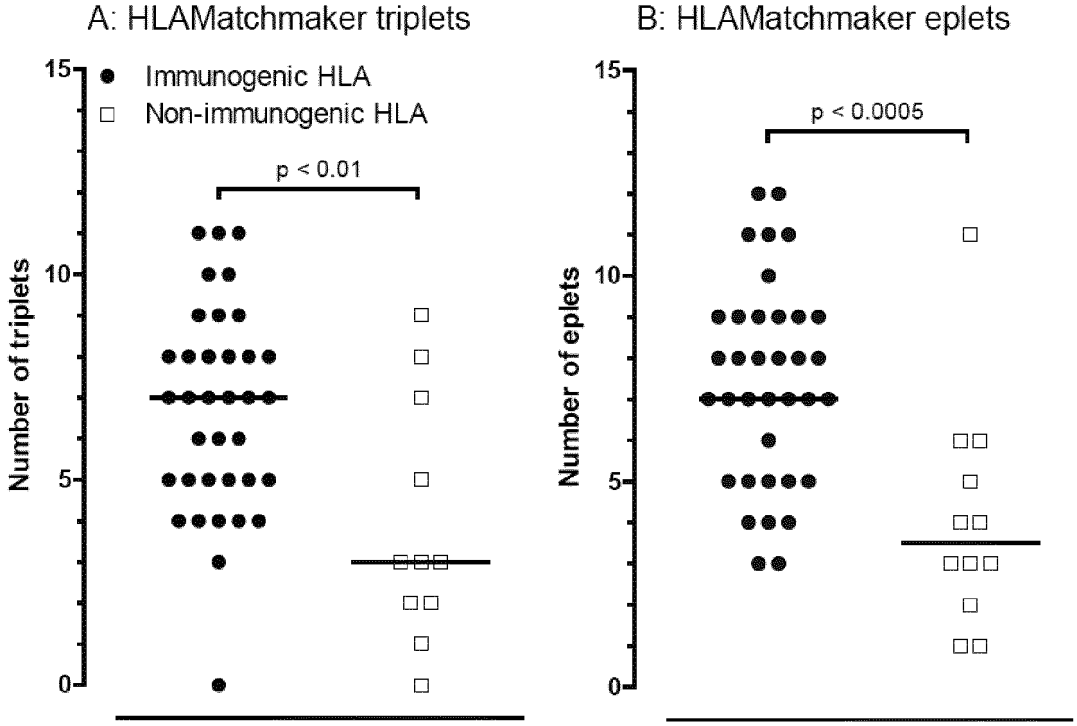
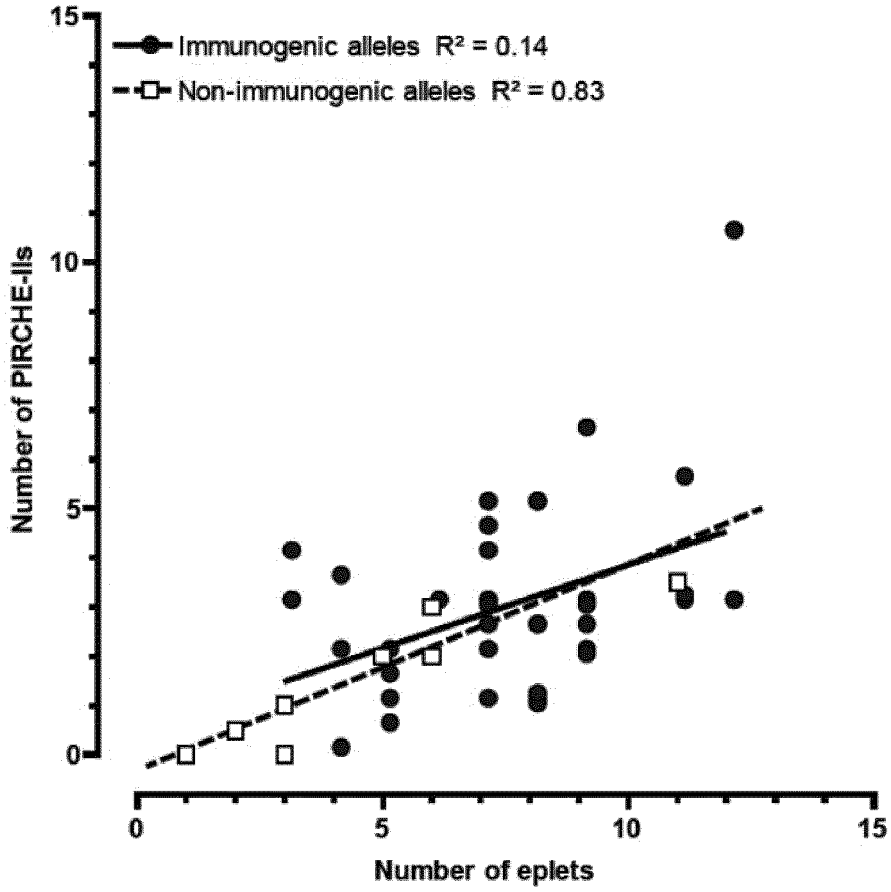

A: HLAMatchmaker triplets
Immunogenic HLA
Non-immunogenic HLA
p < 0.01
Number of triplets
15
10
5
0
B: HLAMatchmaker eplets
p < 0.0005
Number of eplets
15
10
5
0

Fig. 6

A


Immunogenic alleles R² = 0.14
Non-immunogenic alleles R² = 0.83
Number of PIRCHE-IIs
Number of eplets
0
5
10
15

B

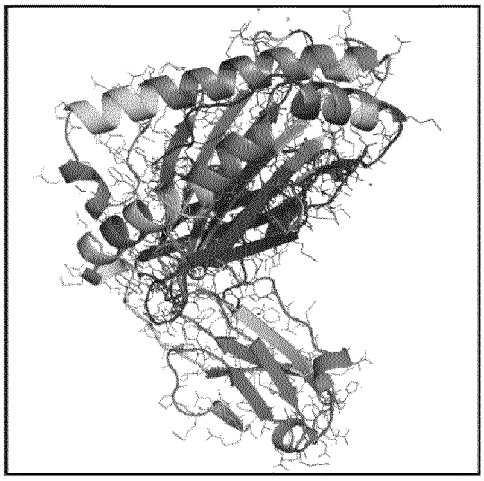


Fig. 6 (cont.)

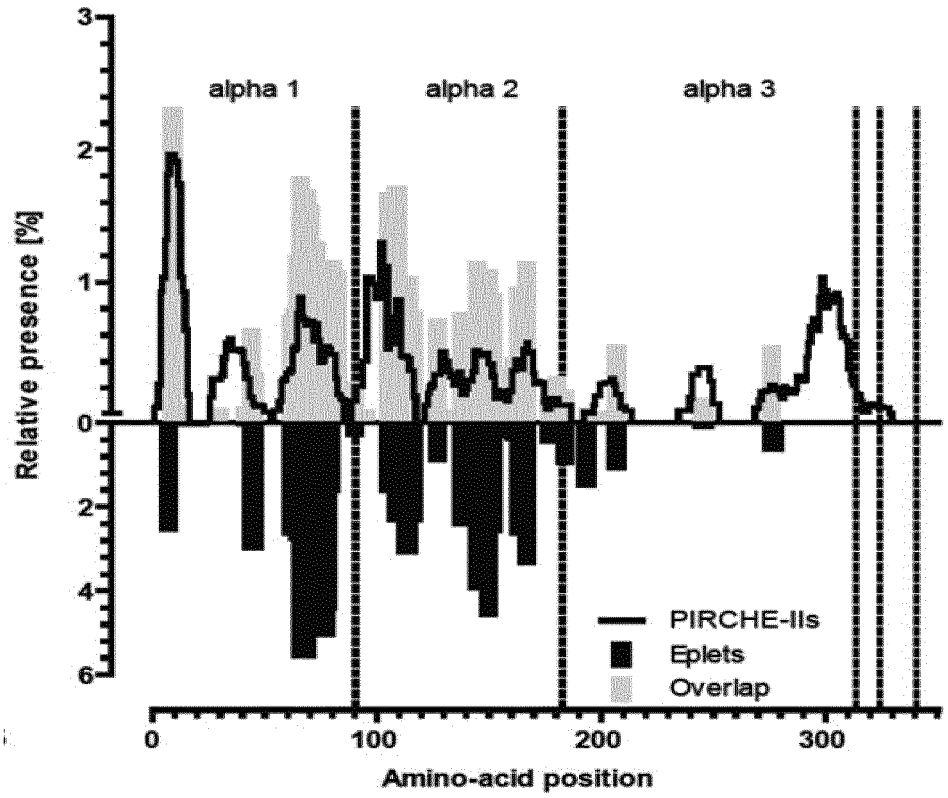
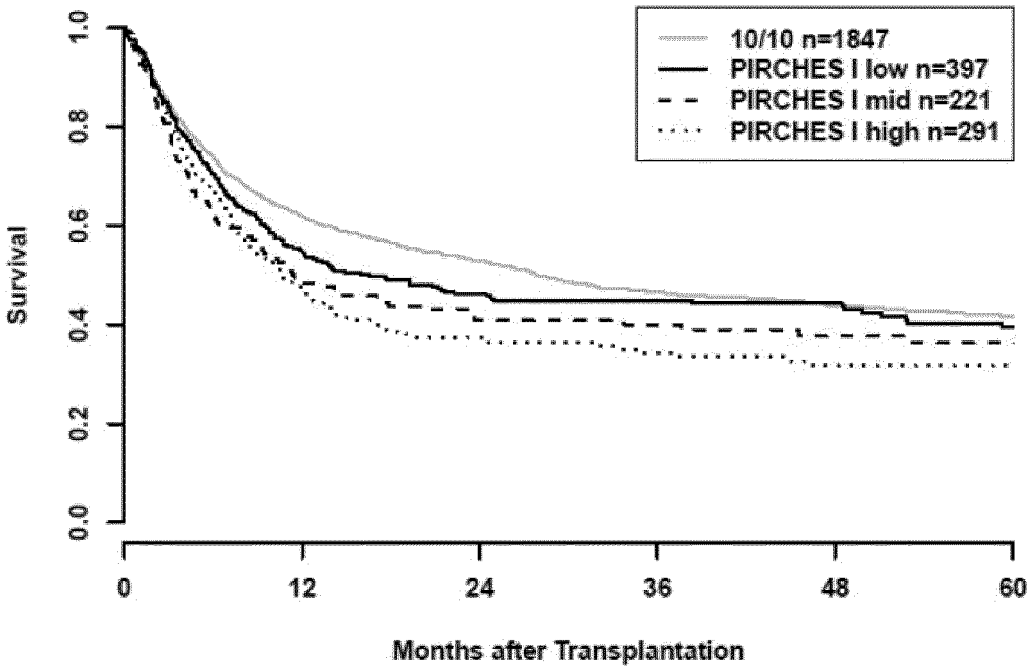

alpha 1
alpha 2
alpha 3
Relative presence [%]
3
2
1
0
2
4
6
0
100
200
300
Amino-acid position
PIRCHE-IIs
Eplets
Overlap

Fig. 7

A


10/10 n=1847
PIRCHES I low n=397
PIRCHES I mid n=221
PIRCHES I high n=291
Survival
0.0
0.2
0.4
0.6
0.8
1.0
0
12
24
36
48
60
Months after Transplantation

B

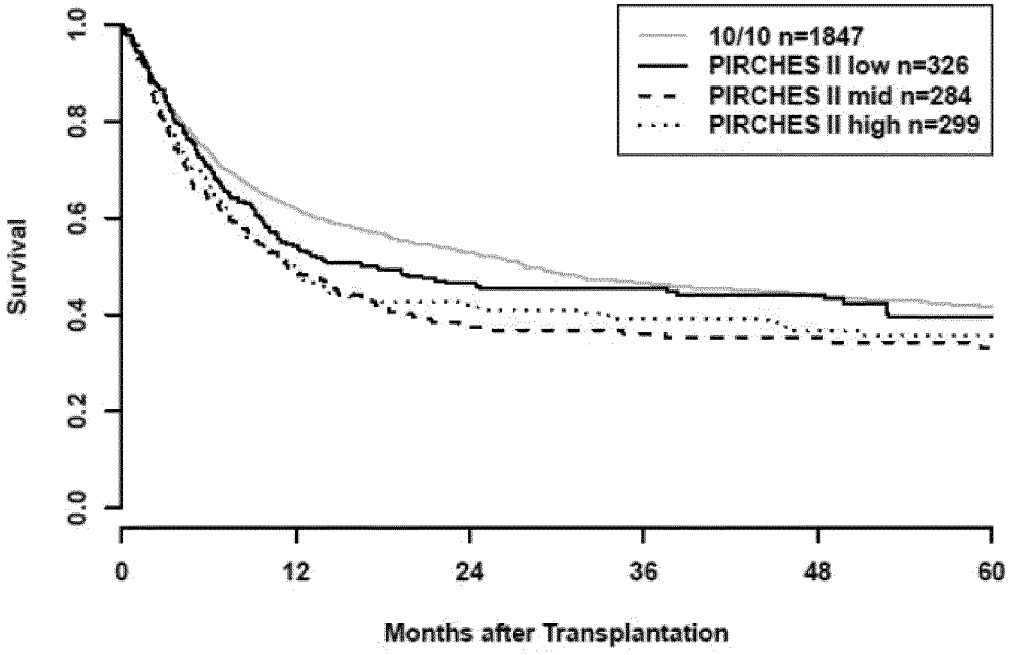
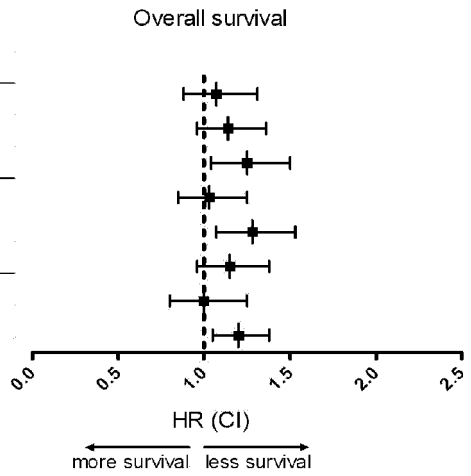

10/10 n=1847
PIRCHES II low n=326
PIRCHES II mid n=284
PIRCHES II high n=299
Survival
0.0
0.2
0.4
0.6
0.8
1.0
0
12
24
36
48
60
Months after Transplantation

Fig. 8

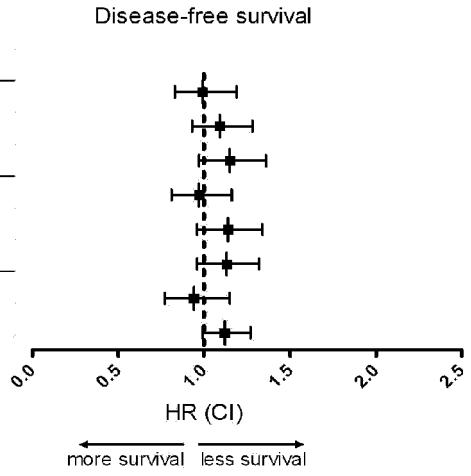
A

PIRCHE group	n events (%)
PIRCHE-I low	137 (49.1)
PIRCHE-I mid	177 (52.2)
PIRCHE-I high	162 (55.7)
PIRCHE-II low	139 (48.4)
PIRCHE-II mid	166 (55.0)
PIRCHE-II high	171 (53.4)
PIRCHE-I and -II low	100 (46.5)
PIRCHE-I or -II higher	376 (54.2)



B

PIRCHE group	n events (%)
PIRCHE-I low	163 (58.4)
PIRCHE-I mid	207 (61.1)
PIRCHE-I high	188 (64.6)
PIRCHE-II low	164 (57.1)
PIRCHE-II mid	189 (62.6)
PIRCHE-II high	205 (64.1)
PIRCHE-I and -II low	120 (55.8)
PIRCHE-I or -II higher	438 (63.1)



C

PIRCHE group	n events (%)
PIRCHE-I low	64 (22.9)
PIRCHE-I mid	89 (26.3)
PIRCHE-I high	76 (26.1)
PIRCHE-II low	62 (21.6)
PIRCHE-II mid	83 (27.5)
PIRCHE-II high	84 (26.3)
PIRCHE-I and -II low	42 (19.5)
PIRCHE-I or -II higher	187 (27.0)

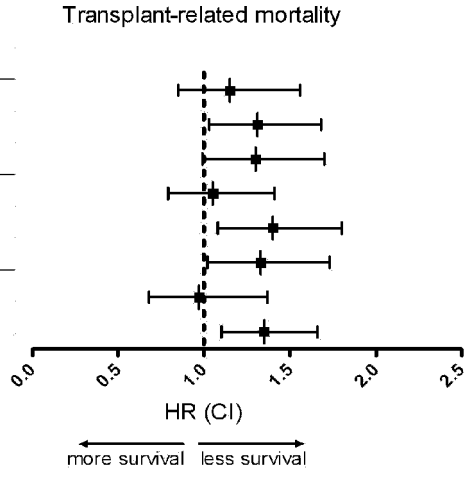
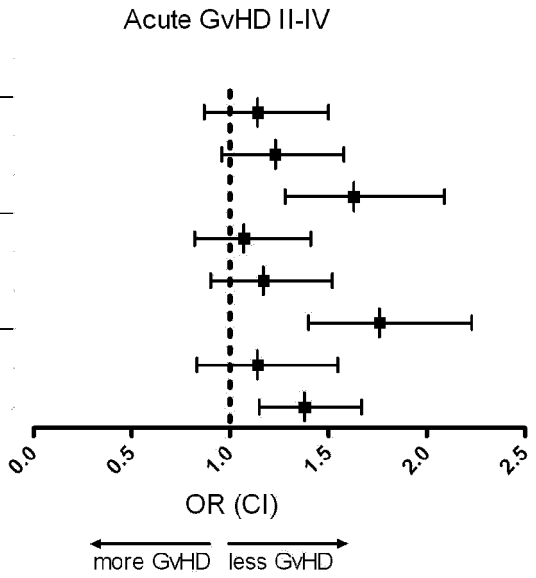


Fig. 8 (cont.)

D

PIRCHE group	n events (%)
PIRCHE-I low	63 (32.6)
PIRCHE-I mid	85 (34.7)
PIRCHE-I high	87 (43.7)
PIRCHE-II low	65 (31.7)
PIRCHE-II mid	72 (34.3)
PIRCHE-II high	98 (44.1)
PIRCHE-I and -II low	48 (32.2)
PIRCHE-I or -II higher	187 (38.3)



E

PIRCHE group	n events (%)
PIRCHE-I low	40 (36.0)
PIRCHE-I mid	49 (37.4)
PIRCHE-I high	59 (53.2)
PIRCHE-II low	45 (40.2)
PIRCHE-II mid	45 (39.8)
PIRCHE-II high	58 (45.3)
PIRCHE-I and -II low	28 (33.3)
PIRCHE-I or -II higher	120 (44.6)

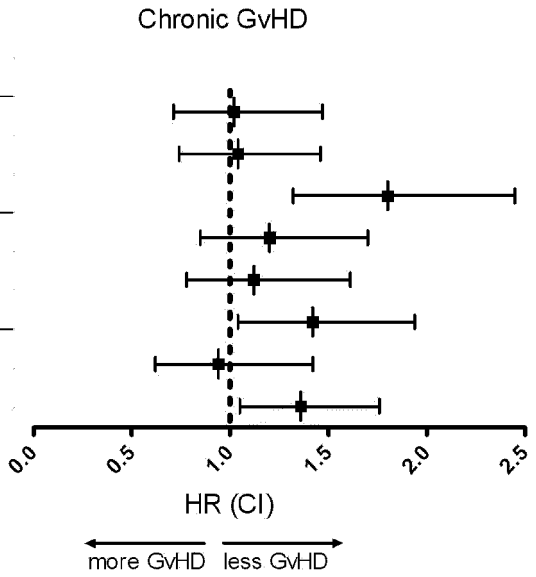
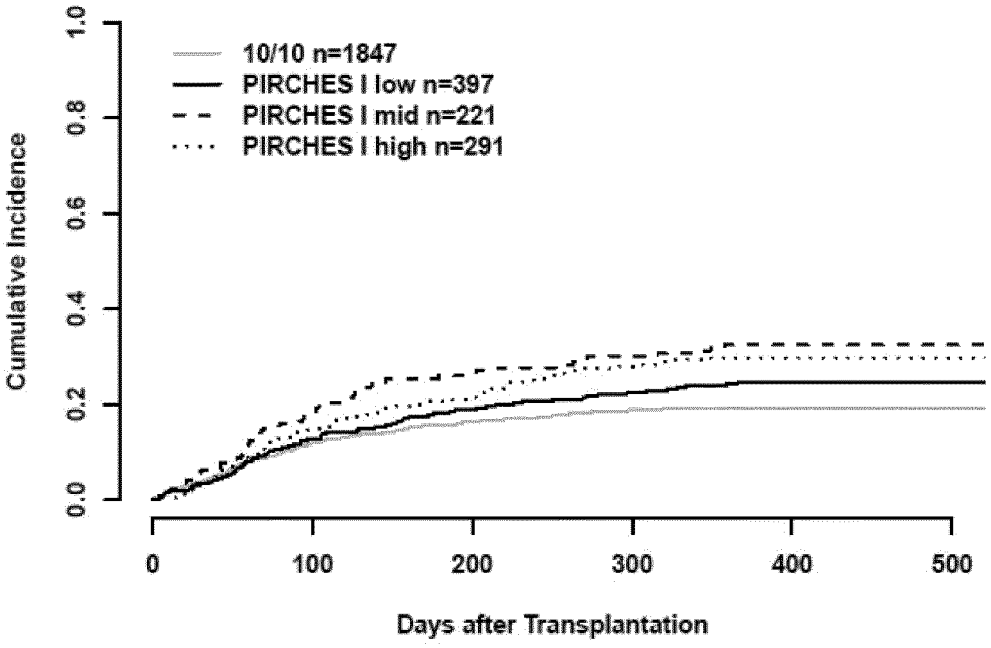


Fig. 9

A


10/10 n=1847
PIRCHES I low n=397
PIRCHES I mid n=221
PIRCHES I high n=291
Cumulative Incidence
0.0
0.2
0.4
0.6
0.8
1.0
0
100
200
300
400
500
Days after Transplantation

B

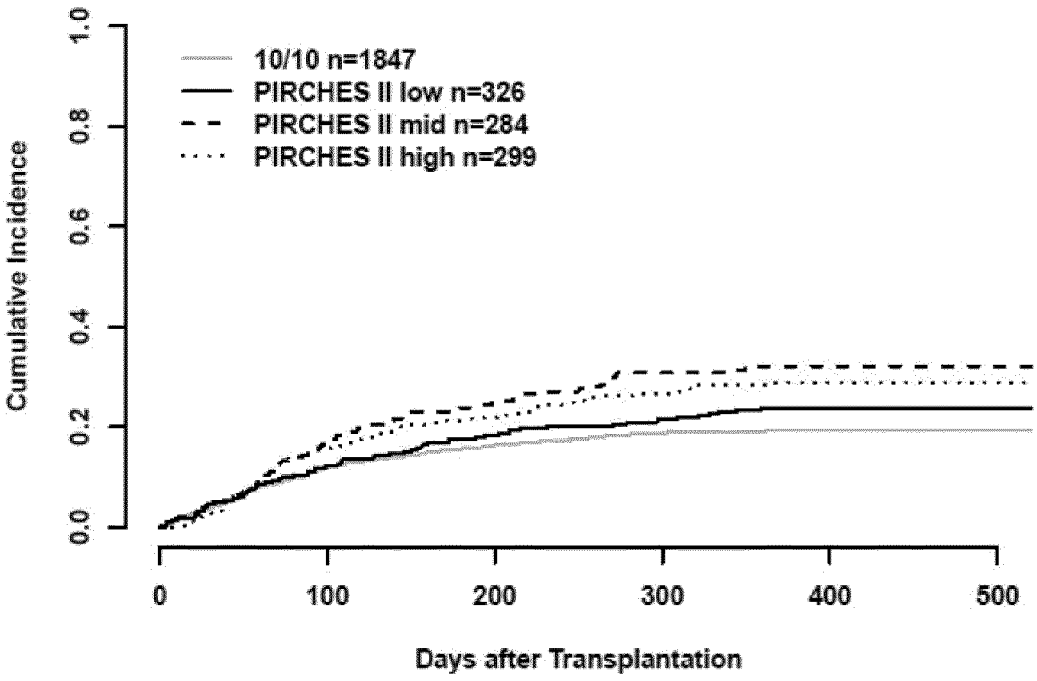

10/10 n=1847
PIRCHES II low n=326
PIRCHES II mid n=284
PIRCHES II high n=299
Cumulative Incidence
0.0
0.2
0.4
0.6
0.8
1.0
0
100
200
300
400
500
Days after Transplantation

Fig. 10

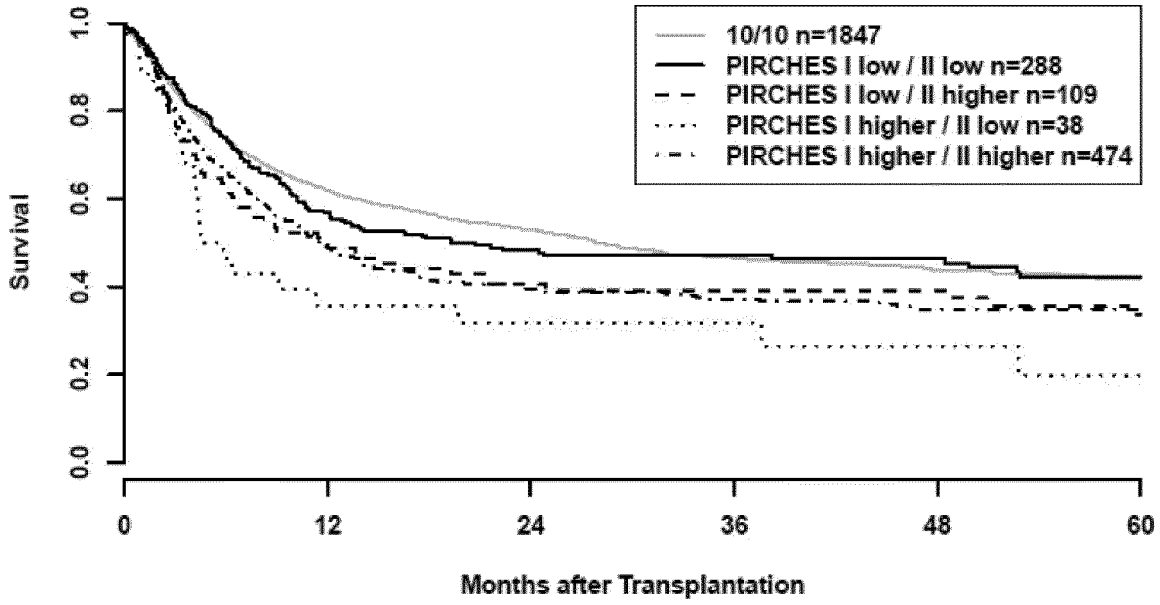
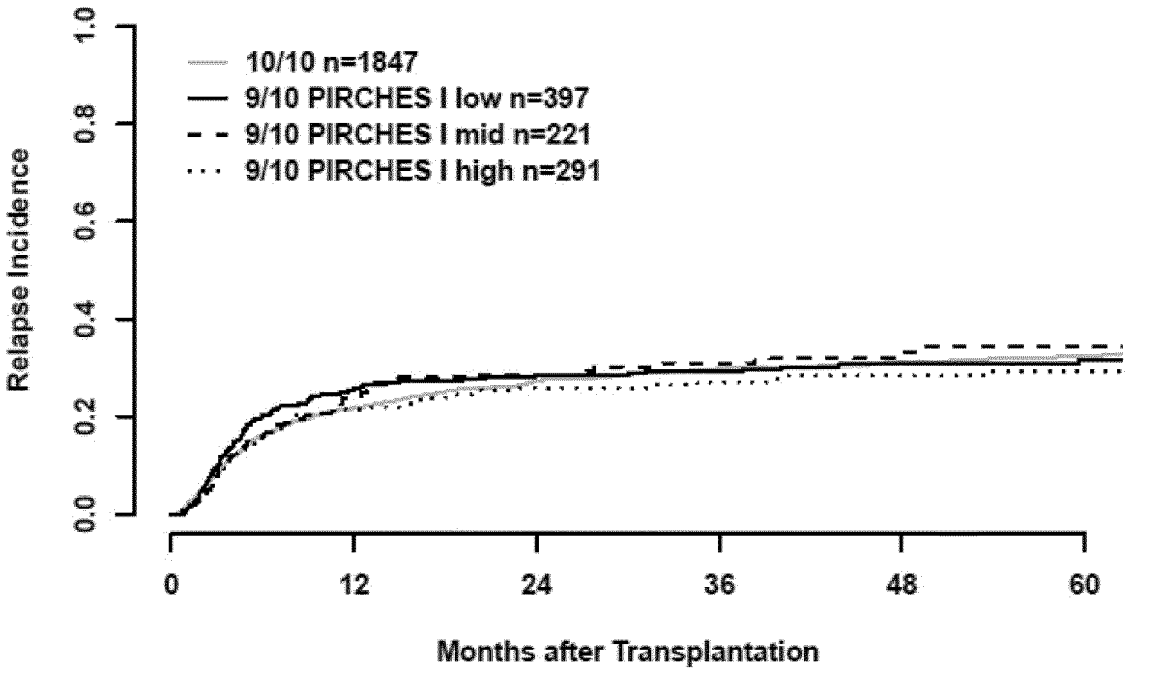
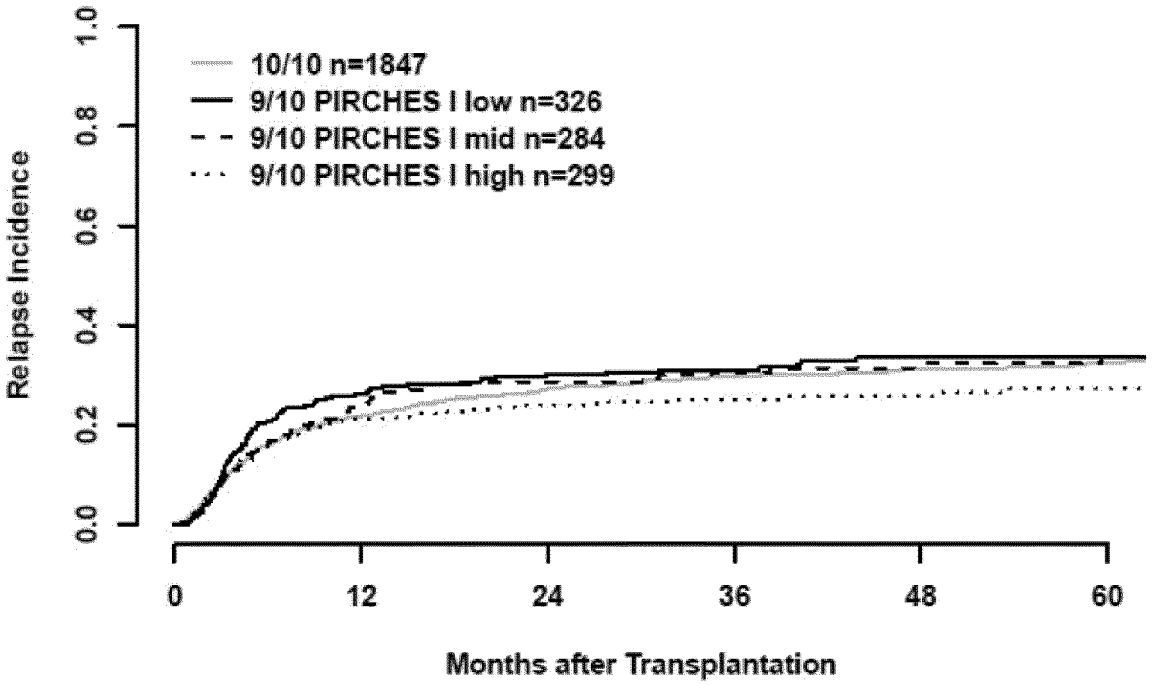

10/10 n=1847
PIRCHES I low / II low n=288
PIRCHES I low / II higher n=109
PIRCHES I higher / II low n=38
PIRCHES I higher / II higher n=474
Survival
0.0
0.2
0.4
0.6
0.8
1.0
0
12
24
36
48
60
Months after Transplantation

Fig. 11


10/10 n=1847
9/10 PIRCHES I low n=397
9/10 PIRCHES I mid n=221
9/10 PIRCHES I high n=291
Relapse Incidence
0.0
0.2
0.4
0.6
0.8
1.0
0
12
24
36
48
60
Months after Transplantation


10/10 n=1847
9/10 PIRCHES I low n=326
9/10 PIRCHES I mid n=284
9/10 PIRCHES I high n=299
Relapse Incidence
0.0
0.2
0.4
0.6
0.8
1.0
0
12
24
36
48
60
Months after Transplantation