

BLINATUMOMAB: Esperienza di Bologna

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Institute Seràgnoli experience

- MT103-203 BLAST (n=2)
 - MDR+ ALL
 - Blinatumomab 15 $\mu\text{g}/\text{m}^2/\text{d}$ x 28 days
- ALCANTARA (n=9)
 - Relapsed/refractory Ph+ ALL
- TOWER (n=5)
 - Relapsed/refractory B-precursor ALL
- Compassionate use (n=11)

Blinatumomab
9 $\mu\text{g}/\text{d}$ x 7 days
28 $\mu\text{g}/\text{d}$ x 21 days

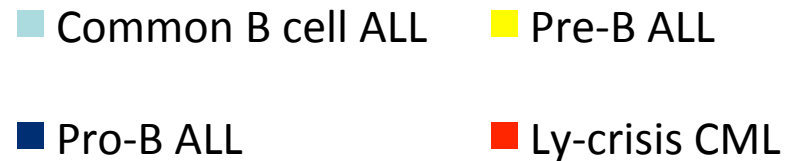
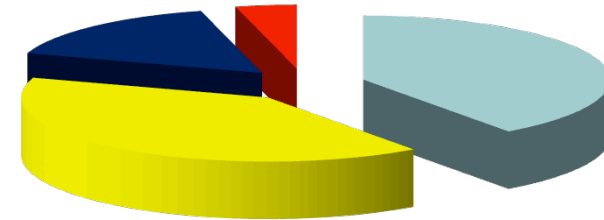
Total: 27 patients
25 homogeneously treated

Patients characteristics

Diagnosis

Diagnosis

- Pro-B ALL 4
- “Common” B-cell ALL 10
- Pre-B ALL 10
- Ly-crisis CML 1



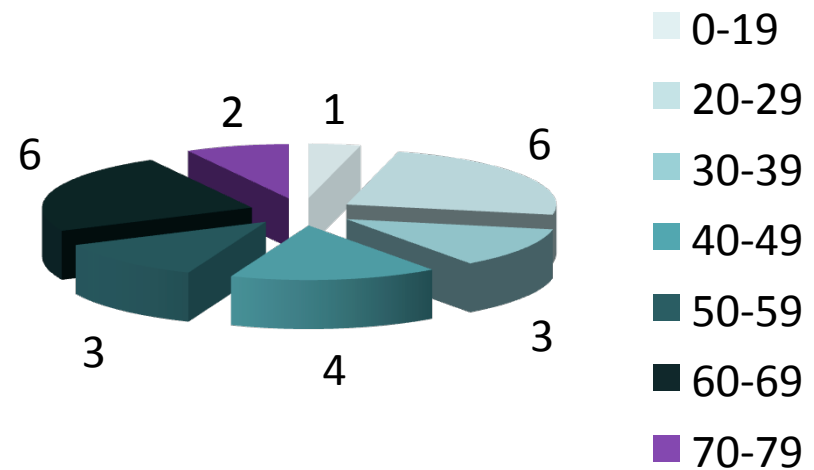
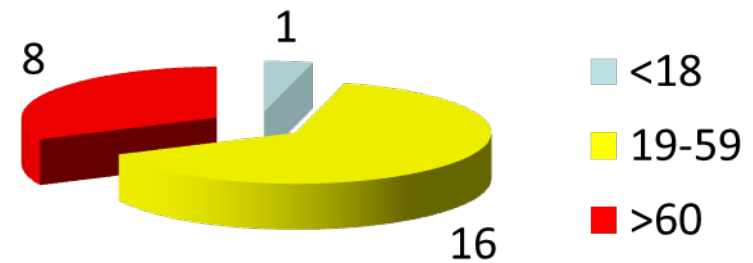
Disease state

- Progressive disease 19
- MRD-positive 6

Patients characteristics

Age

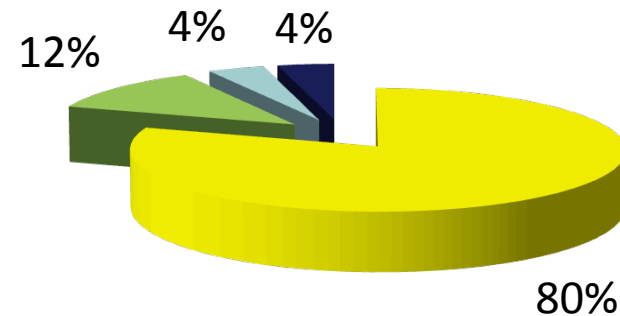
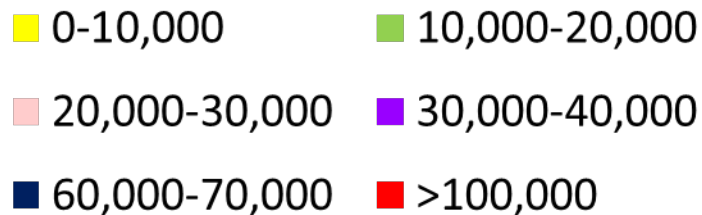
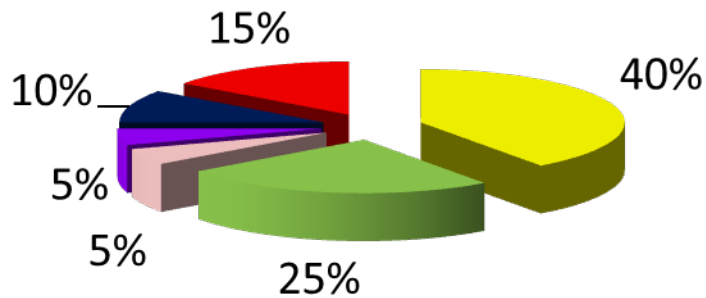
- Median age: 42 years
- Below 18: 1
- Over 60: 8 pts



Patients characteristics

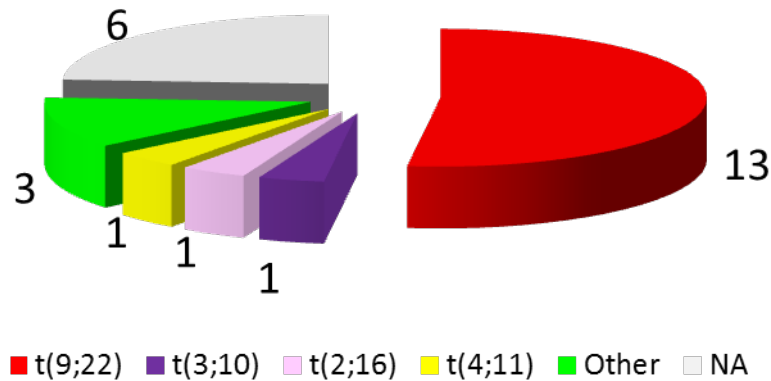
WBC

- Median WBC count: 15,800/mmc (1,900-313,000)
- >50,000/mmc: 5
- Median WBC count at treatment: 2,800/mmc (700-76,500)
- >50,000/mmc: 2

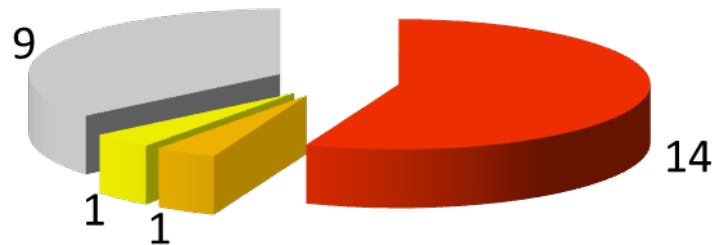


Patients characteristics

Genetic features



■ t(9;22) ■ t(3;10) ■ t(2;16) ■ t(4;11) ■ Other ■ NA



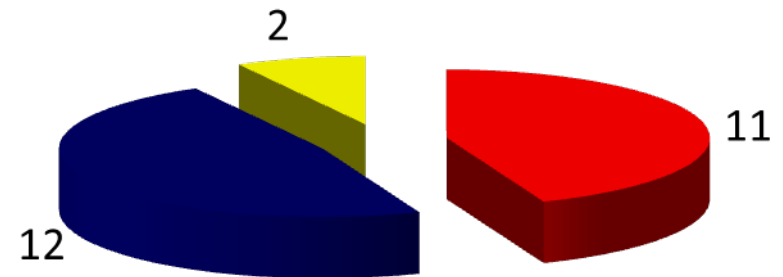
■ BCR-ABL1 ■ TCF3-PBX1 ■ MLL-AF4 ■ None

- *BCR-ABL1*-positive 14
 - p190 9
 - p210 5
- *TCF3-PBX1* 1
- *MLL-AF4* 1

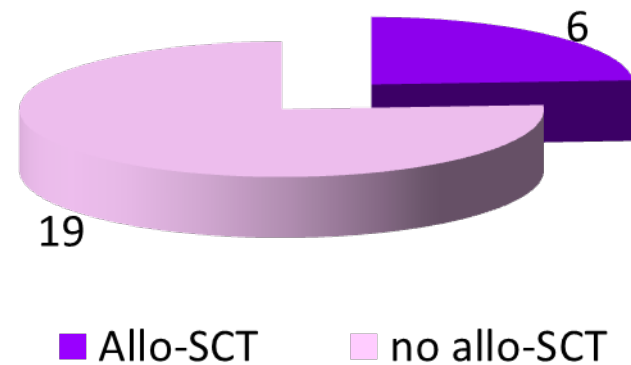
Patients characteristics

Previous therapy

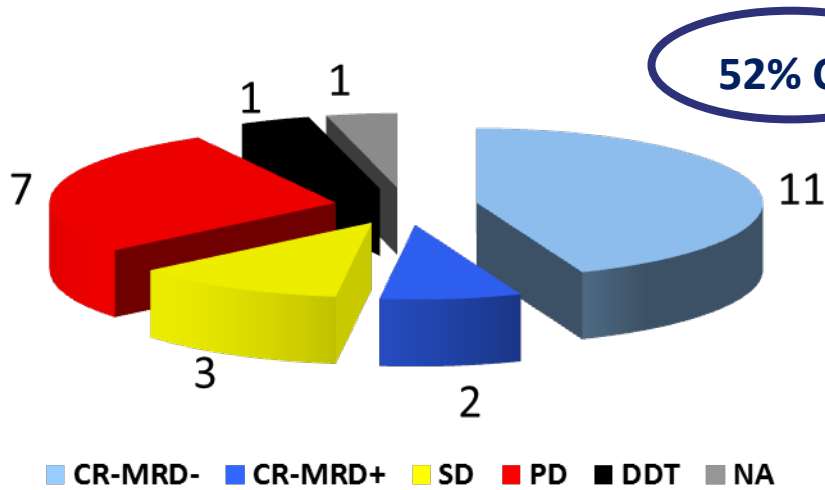
- Median number of previous lines: 3 (1-7)



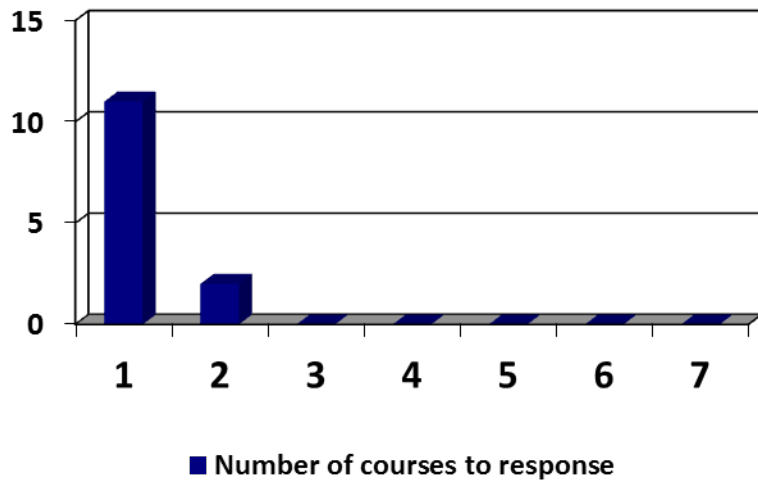
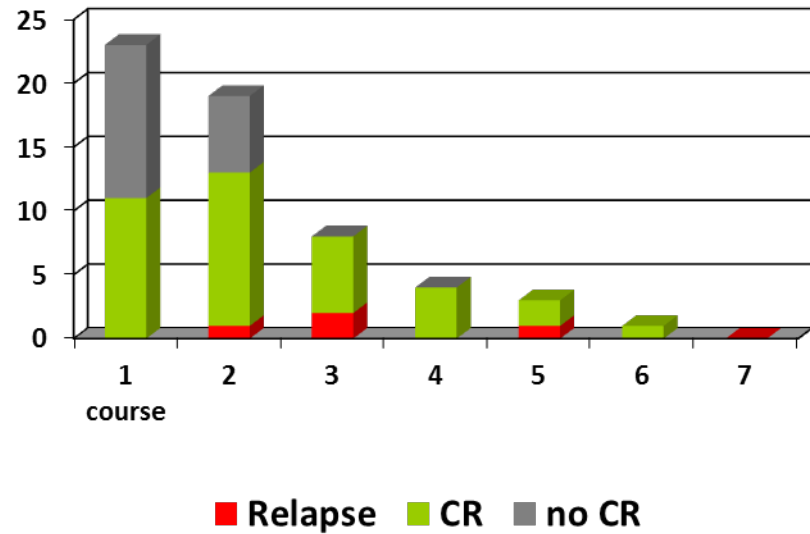
- Type of TKI
 - Imatinib (n=3)
 - Dasatinib (n=12)
 - Nilotinib (n=2)
 - Ponatinib (n=11)



Treatment response 1

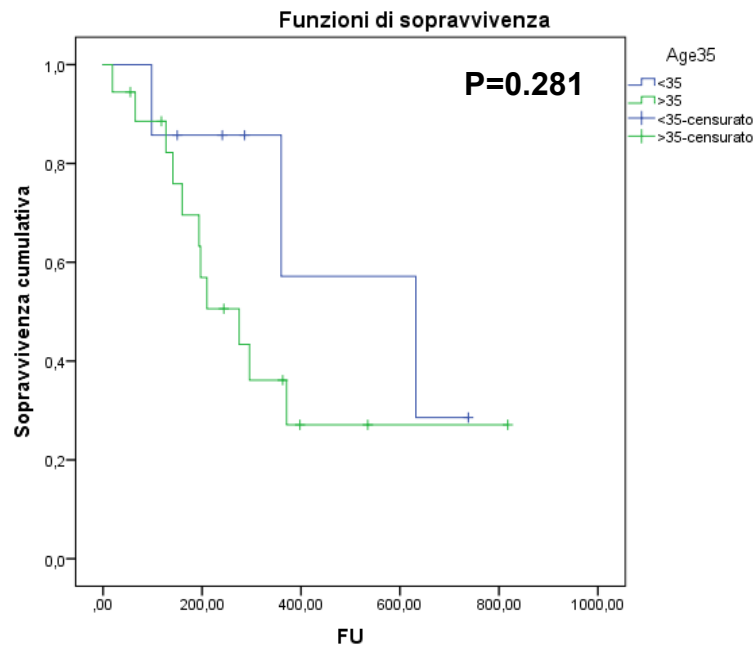


Response by course of treatment

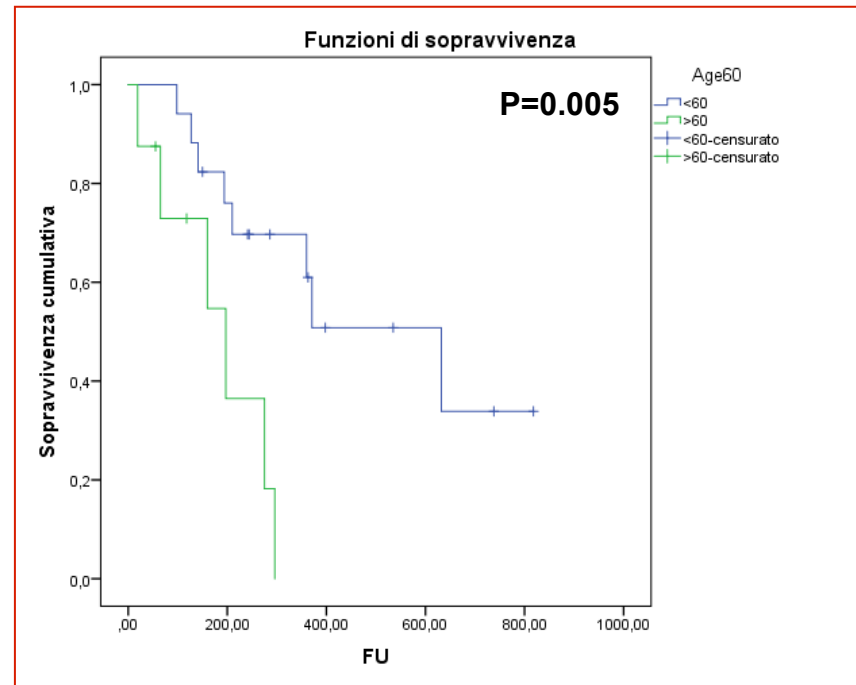


Overall survival

Age (Cox, $p=0.0124$)



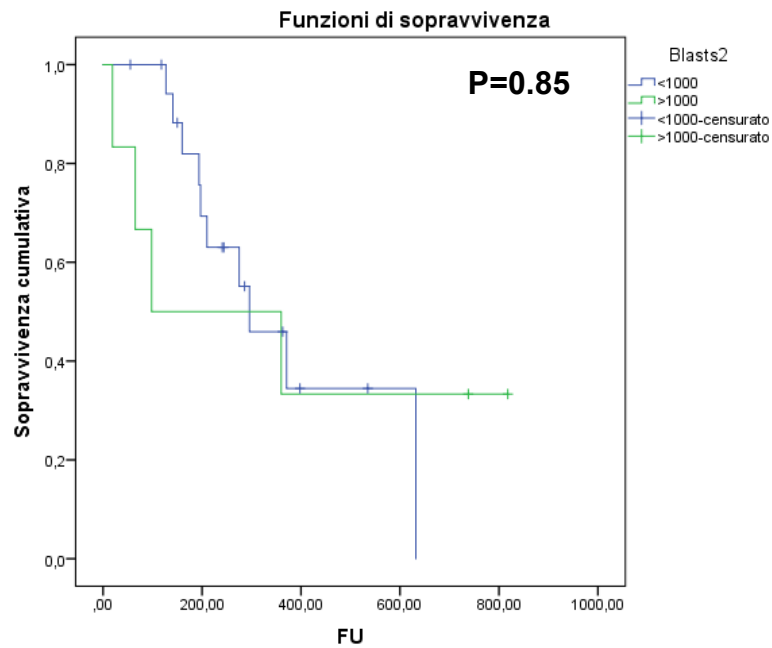
<35 vs. >35



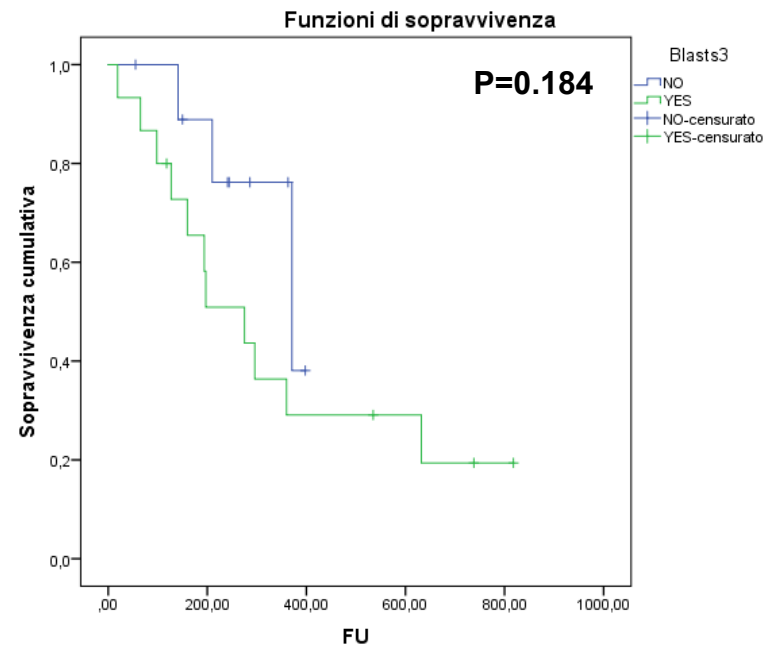
<60 vs. >60

Overall survival

Blast count (Cox, $p=0.0063$)



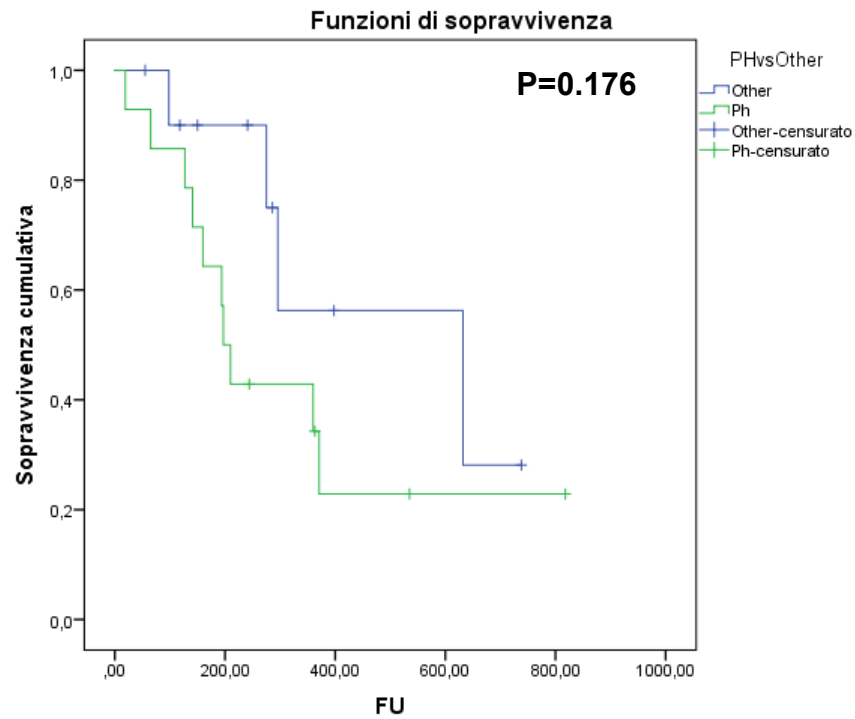
<1,000 vs. >1,000



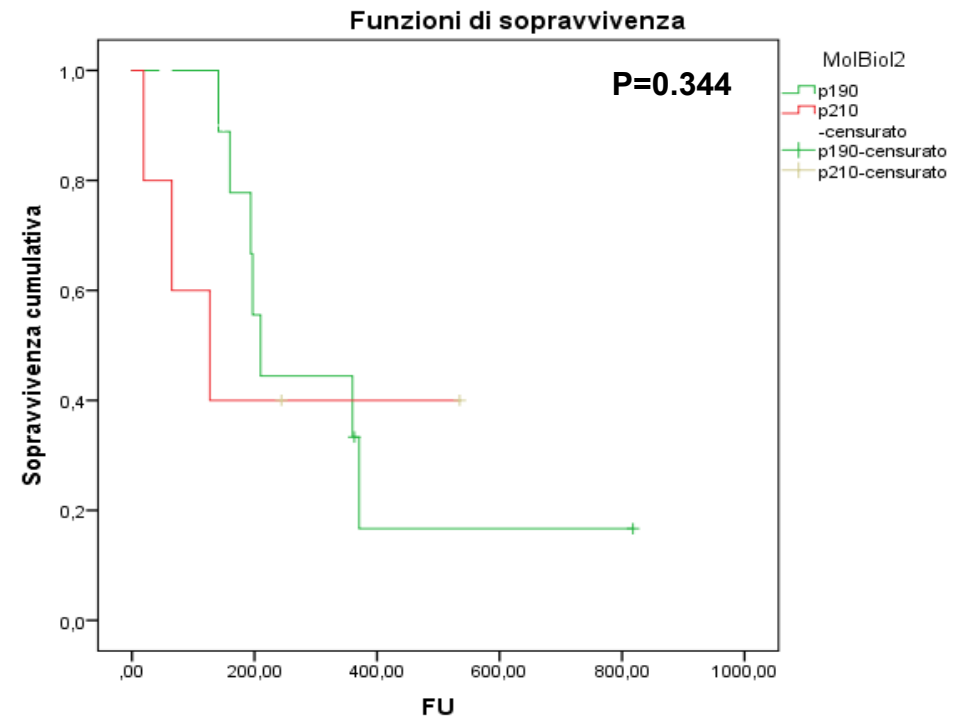
No blasts vs. any blast count

Overall survival

Genetics



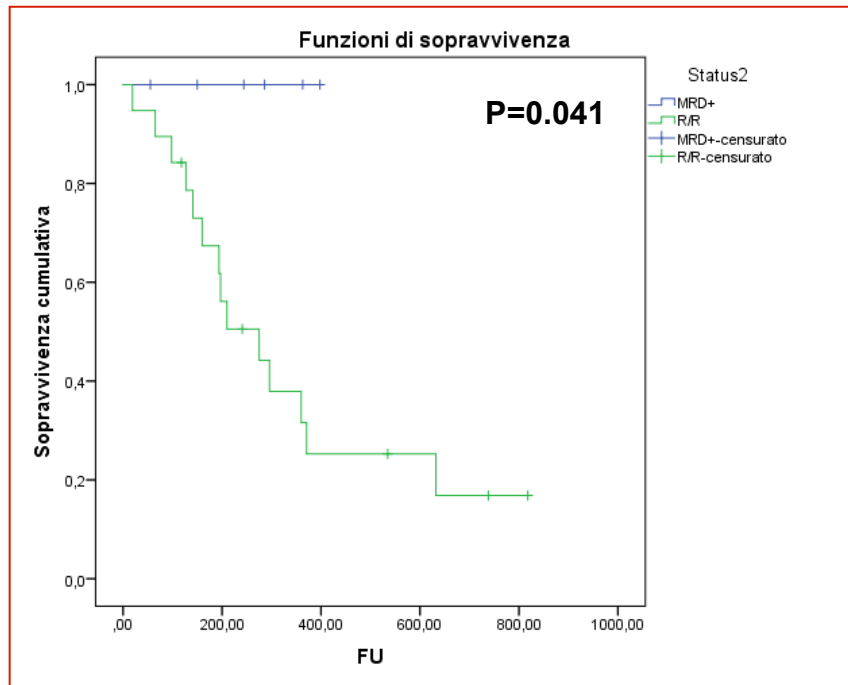
***BCR-ABL1*-pos vs. Others**



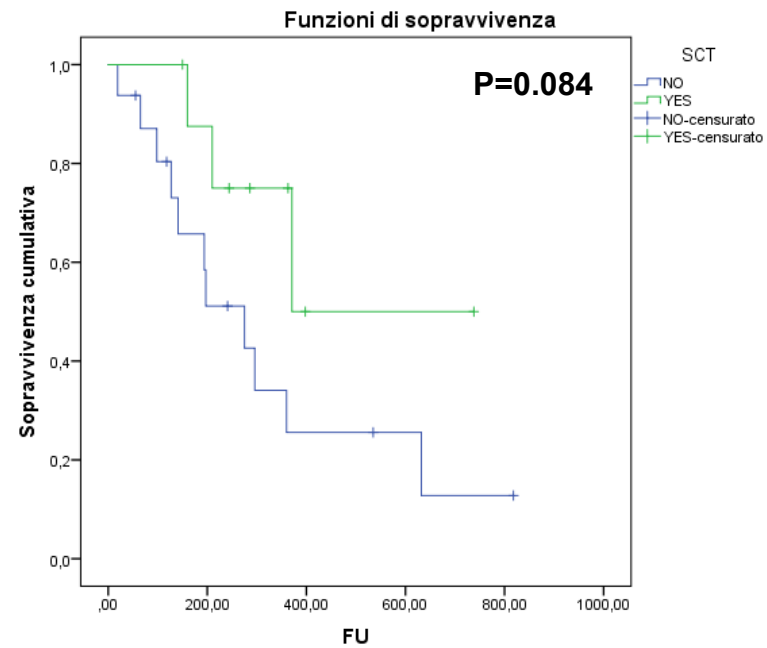
p190* vs. *p210

Overall survival

Disease Status & SCT



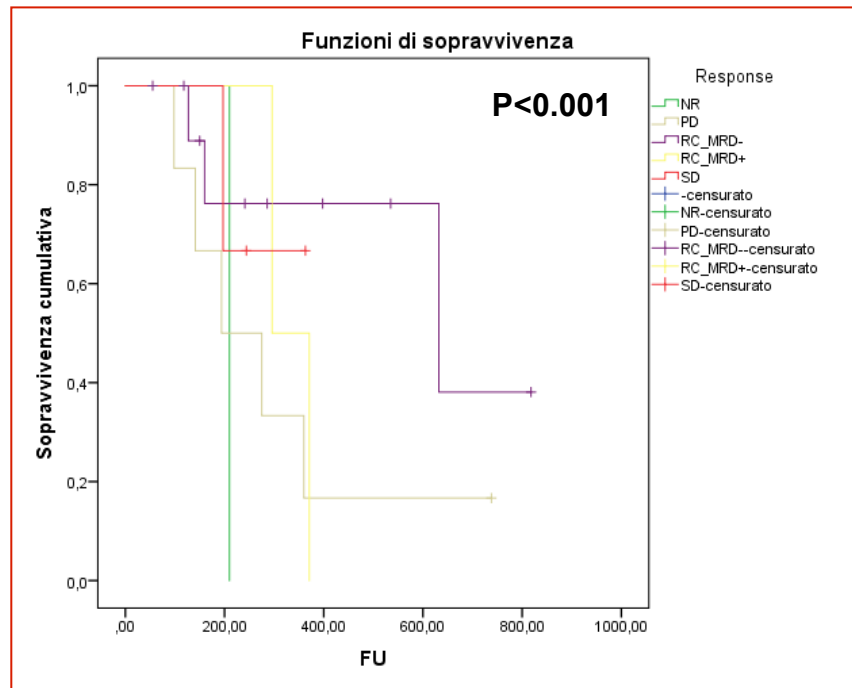
MRD+ vs. Active disease



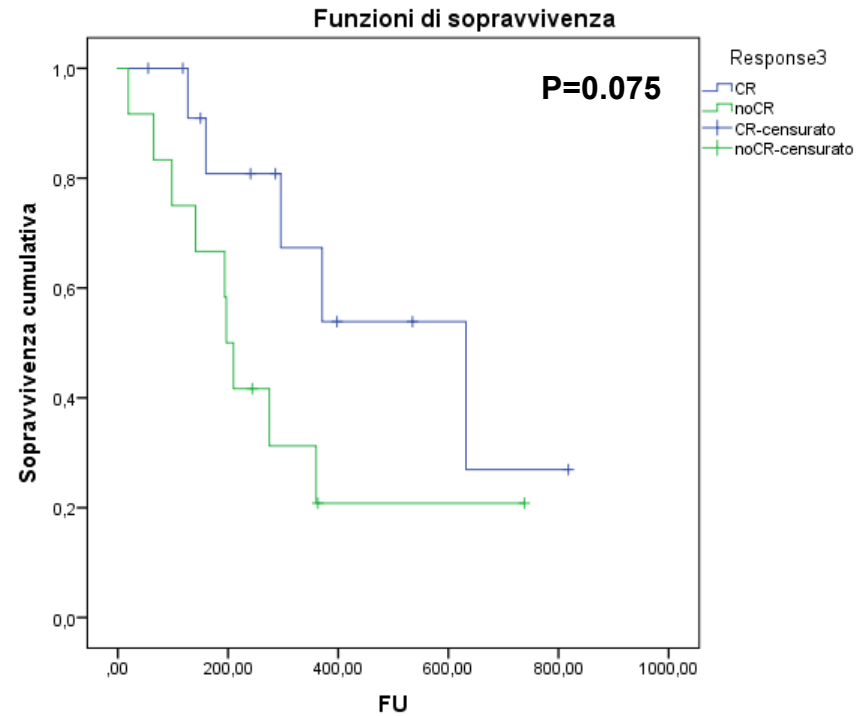
SCT: YES vs. NO

Overall survival

Treatment response



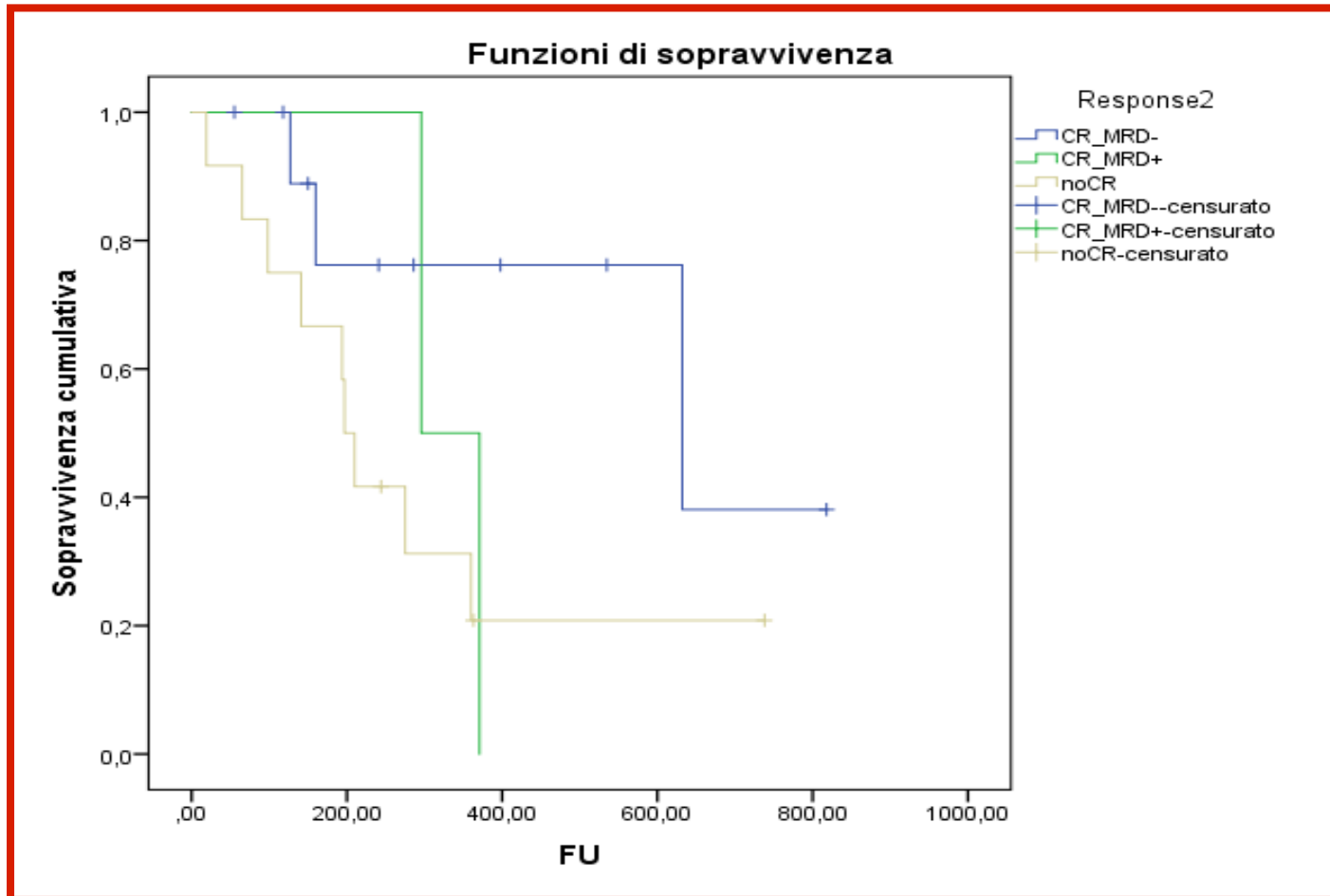
All types



CR vs. no CR

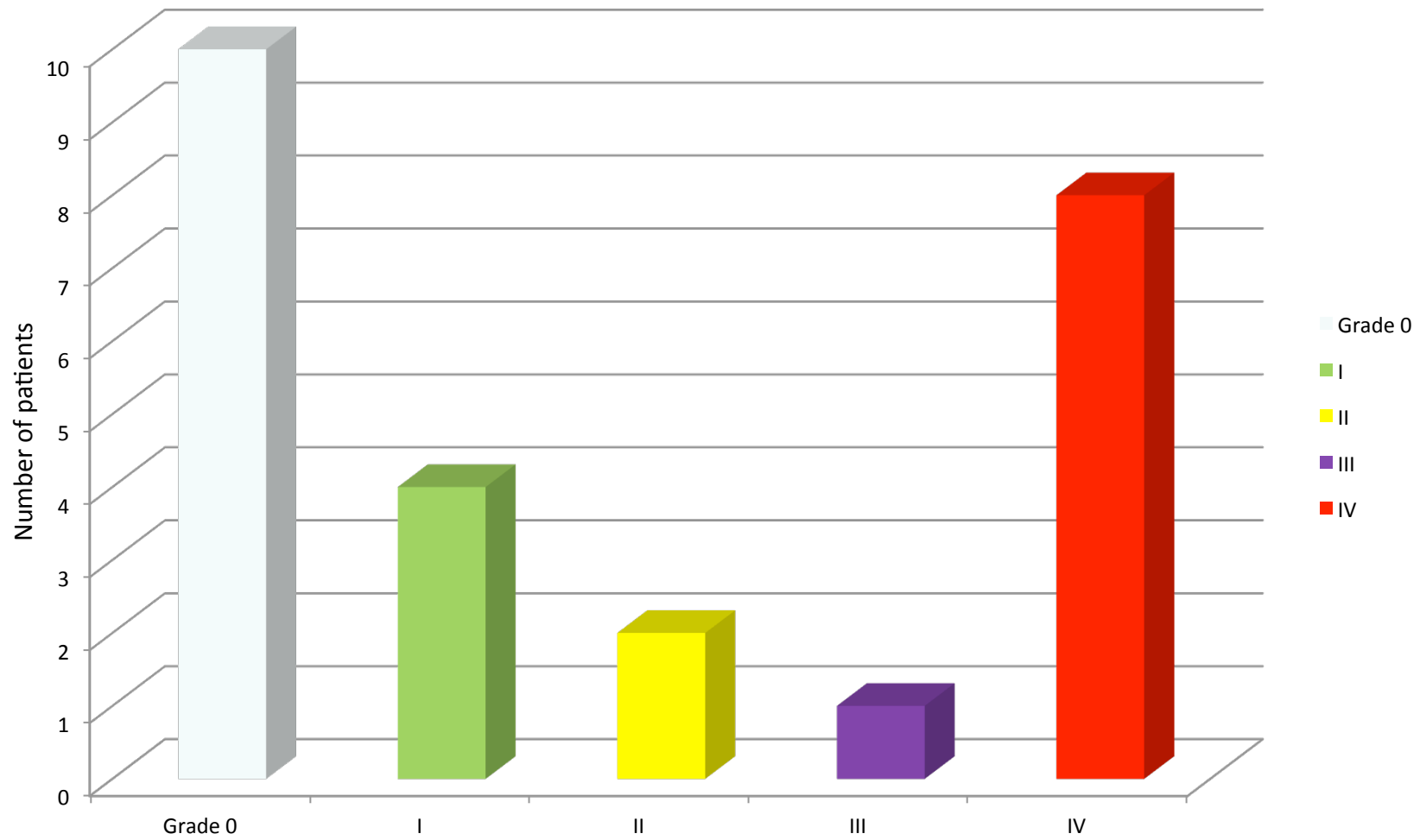
Overall survival

Treatment response



MRD- vs. MRD+ vs. no CR

Toxicity Hematological

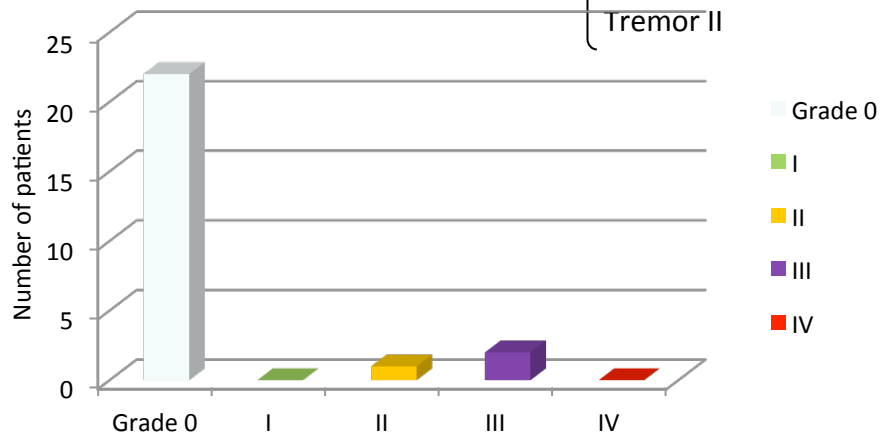


Toxicity

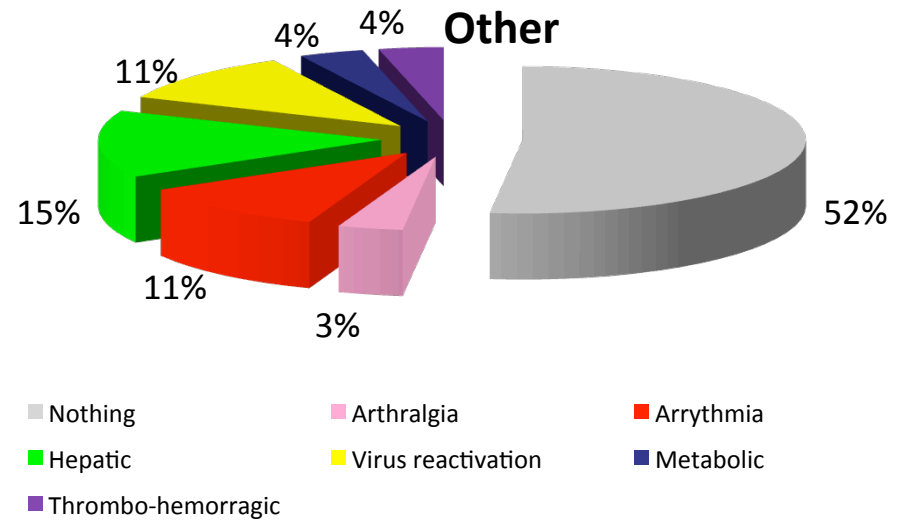
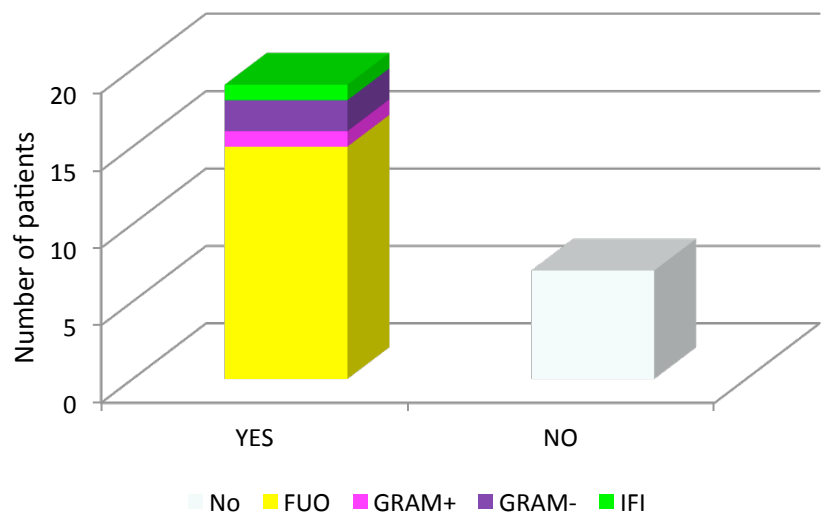
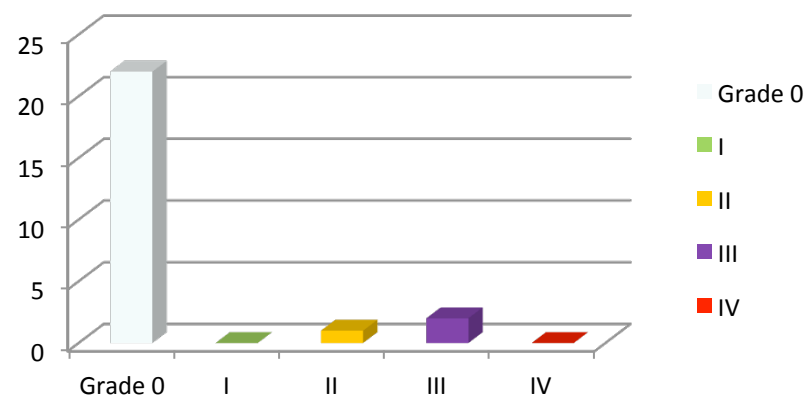
Non-Hematological

Neurological

Confusion III
Vertigo III
Tremor II

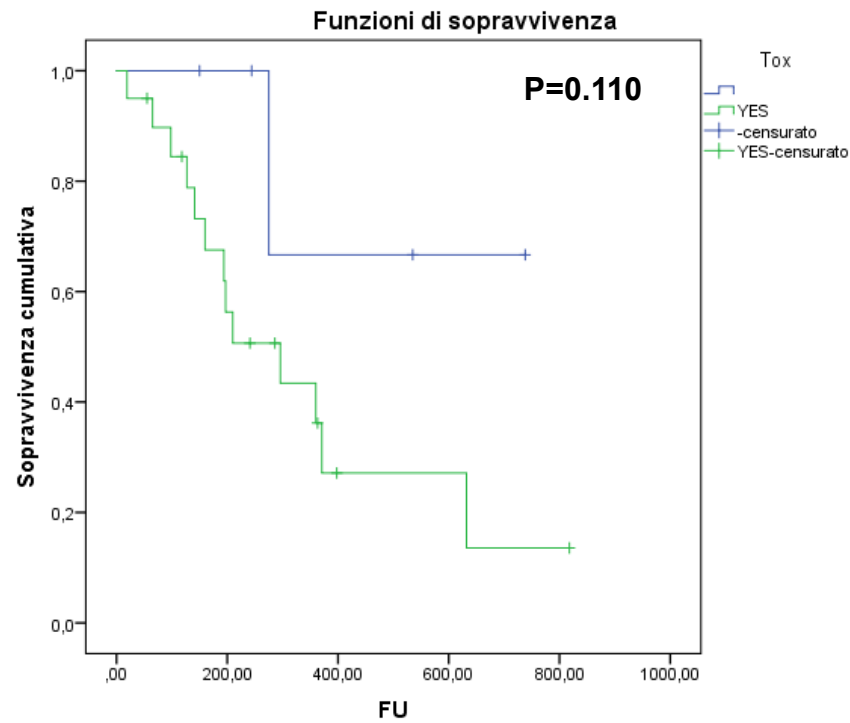


Cytokine release

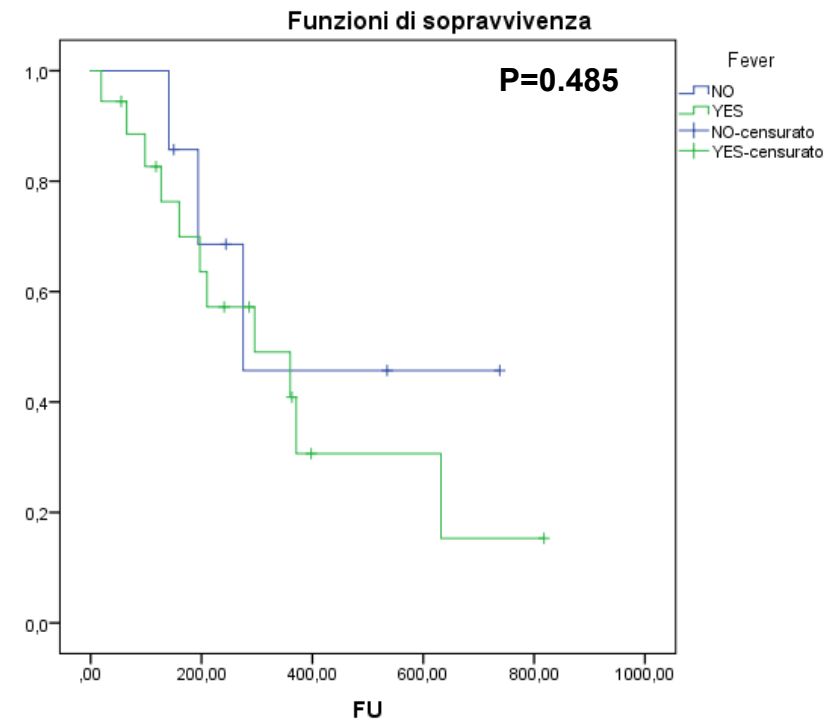


Overall survival

Toxicity



Any toxicity



Fever

Case Report 1

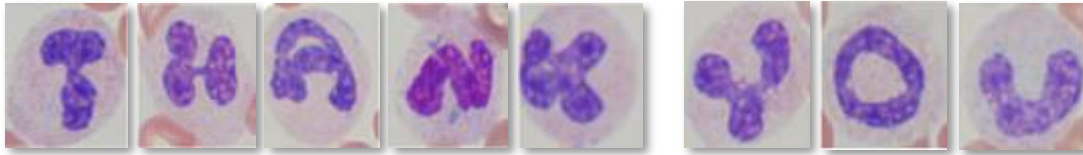
- F.L 72 years old, «Common» B-cell ALL
- WBC 17,000/mm³ with t(3;10)(p21;q24)
- R-BFM x 6 cycles with CR MRD- after 4th
- **Hematological relapse** after 7 months
- 12/01/2016 start Blina 9 µg/d
- 14/01/2016 **fever** until 38.5C, **severe hypotension, renal failure, desaturation, AST/ALT increase grade III**, severe neutropenia
- **Septic shock vs cytokine release syndrome**
- **Rapid resolution** with stopping blina
- 19/01/2016 restart Blina **without further complications**
- Patient is ongoing 4th cycle **MRD-**

Case Report 2

- P.L 60 years old, Ph+ p210 ALL, WBC 131.000/mmc
- CHEMO+TKI treatment with CR MRD+ relapsed 5 months after allogeneic SCT
- 11/03/2014 start Blina x 4 weeks (FUO and arrhythmia)
- 08/04/2014 **CR MRD-**
- 29/04/2014 start 2[^] cycle
- During 2[^] cycle **inferior legs paresthesia** appears with **weakness** and **progressive paresis**.
- **Blina neurological toxicity?**
- **No resolution** after stopping blina
- Spine RMN: **extramedullary tissue** with spinal cord compression
- 30/05/2014 BM: hematological relapse

Summary

- Effective
 - above all in MRD+
- Safe
 - combination therapy idea
- CCR also without SCT
 - Elderly!



From Morgan and Young,
Blood, 2013