

AML in CR1

What now?

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The case

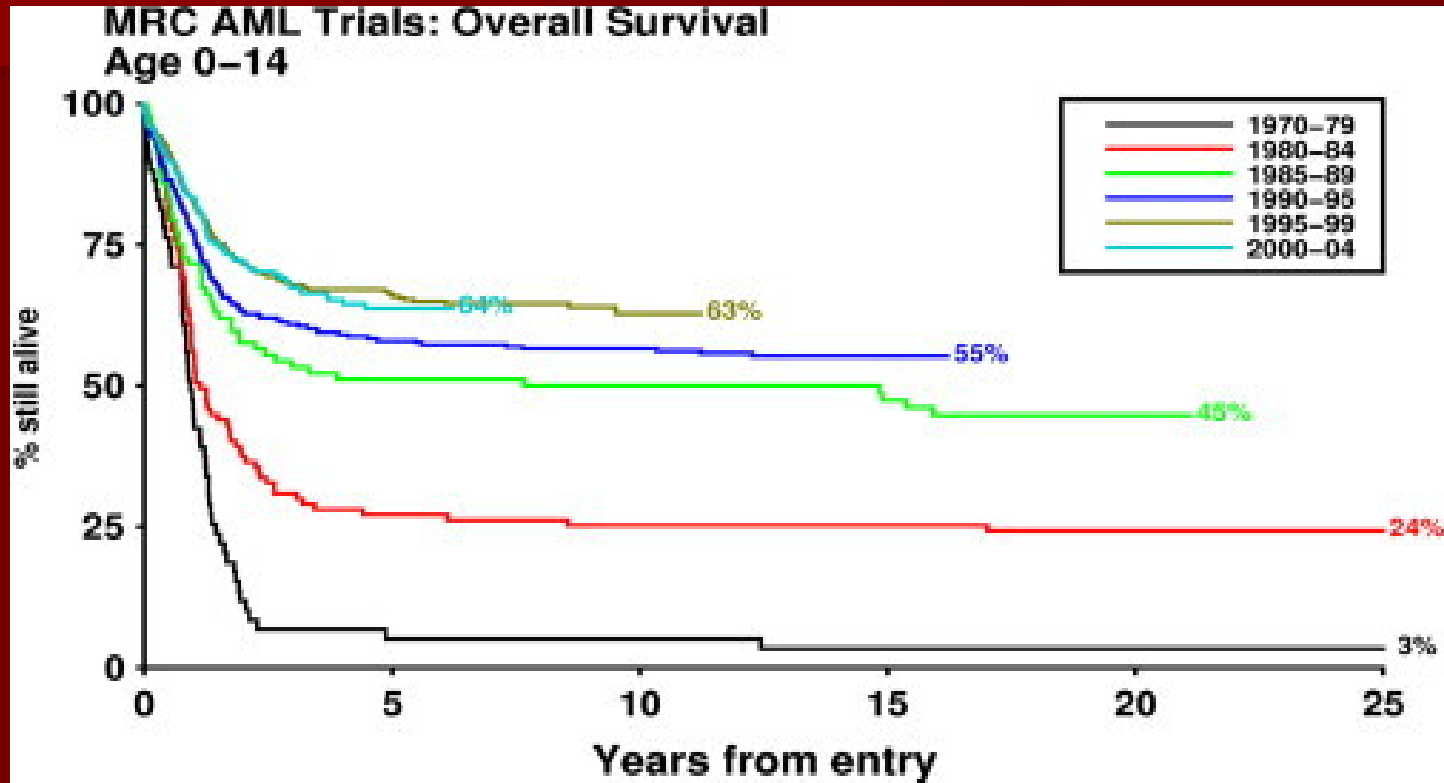
- A 10 year old boy with
- Acute myelogenous leukaemia (M2-FAB)
- Leukocyte count of of $16 \times 10^9/L$ with
- 30% myeloblasts (CD34+, DLA-DR+, CD33+, CD13+, CD7+)
- normal male karyotype, 46 XY cytogenetics,
- CSF clear
- Blood group O pos, CMV neg.

The case

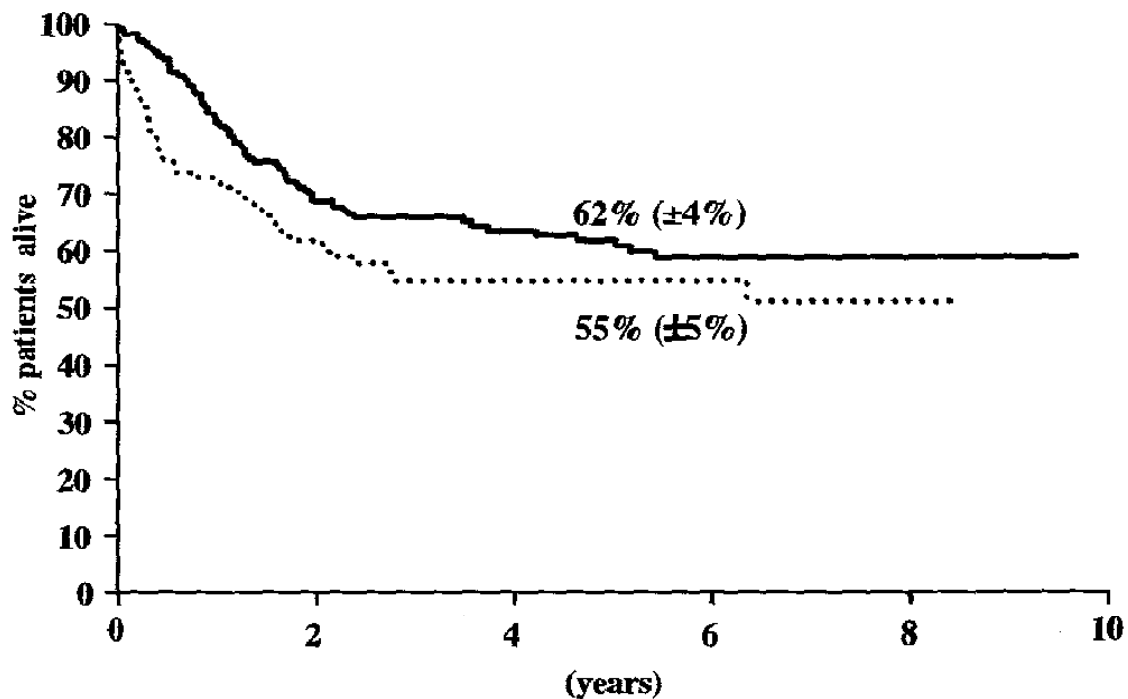
- Achieves remission after induction chemotherapy .
- He does not have siblings.
- Local registry indicated that there are several matches available.
- One donor called, 10/10 High res match, 32 year old male, CMV neg, O Pos, athletic 105 kg.

Do we
transplant?

AML History



Overall survival of children younger than 15 years of age who had acute myeloid leukemia treated in MRC trials during the past 3 decades.



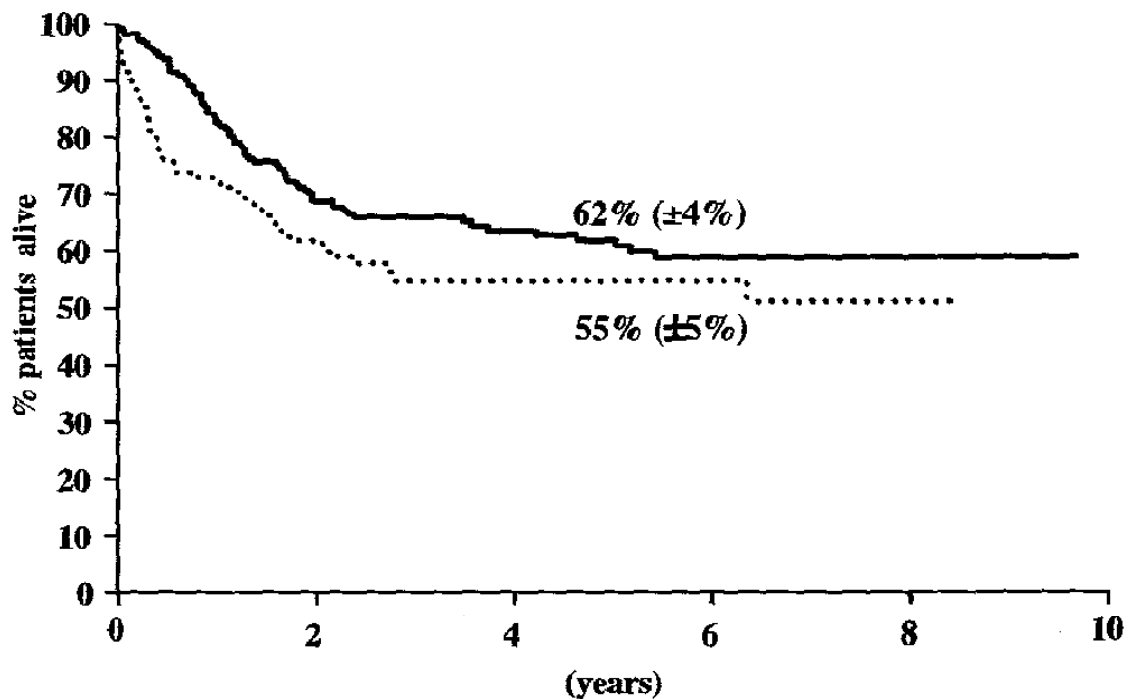
O	N	Number of patients at risk :				
68	177	119	80	42	16	— 58921
49	108	66	38	19	5 58872

Overall Survival from start of treatment by study EORTC 58921 and 58872

AML Today

Favorable

- AML with the $t(15;17)(q22;q12-21)$
- AML with the $inv(16)(p13q22)$ or $t(16;16)(p13;q22)$
- AML with the $t(8;21)(q22;q22)^*$
- AML with the $t(9;11)(p22;q23)^*$
- AML in children with Down syndrome
- AML in children under 1 year of age



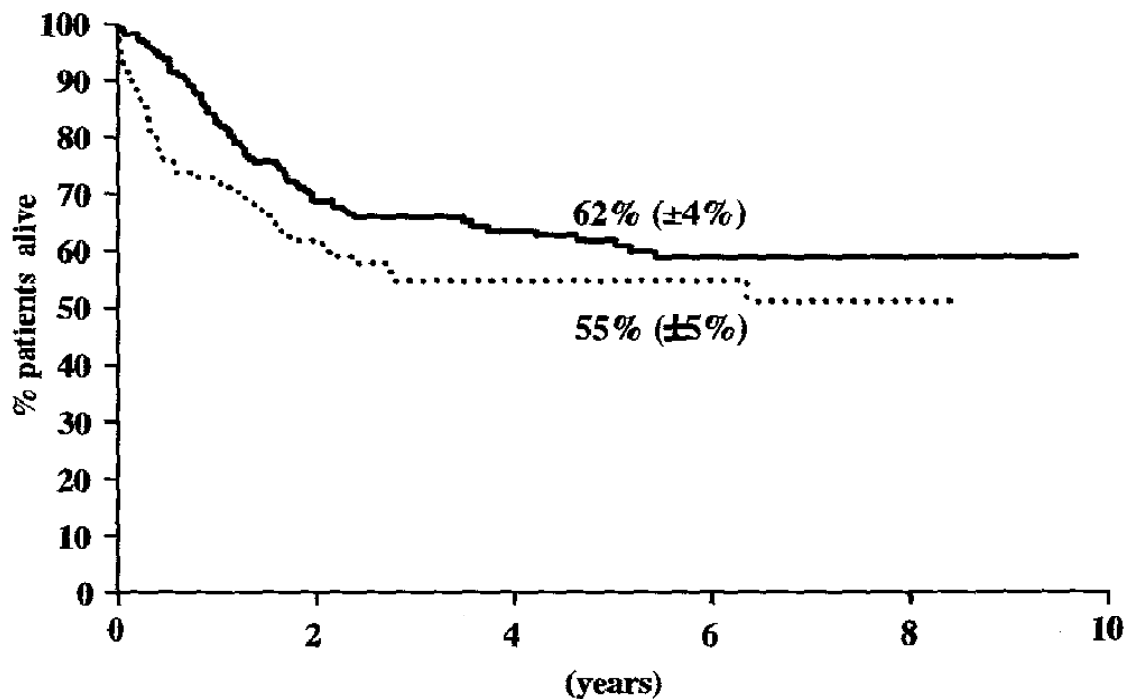
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AML Today

Unfavorable

- AML with monosomy 7 or -7(q)
- AML with the t(6;9)(p23;q34)
- AML with complex karyotype
- AML evolving from myelodysplastic syndrome
- Persistent leukemia after 2 courses of intensive chemotherapy
- Therapy-related AML



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Overall Survival from start of treatment by study EORTC 58921 and 58872

AML Today

Intermediate or undefined

- Acute megakaryoblastic leukemia
- AML with other non-random chromosome abnormalities
- AML with normal karyotype
- FLT3 mutations/internal tandem duplications
- MLL amplification
- Expression of ATP-binding cassette (ABC) transporters
- CCAAT/enhancer binding protein alpha gene mutations
- Over expression of ecotropic viral integration site-1 (EVI-1)

The facts

- There are no randomised control trials.
- The MRC AML10 and AML12 showed a significant reduction in relapse risk ($p=0.02$) but no significant improvement in DFS or OS post SCT.
- NOPHO-AML 93 (Nordic), HSCT not necessary at first remission
- AML-BFM 93 (Germany) (1993–98) HSCT did not provide a survival advantage in first remission
- LAME 91 (French) (1991–98) Allogeneic BMT did not improve outcomes in good-risk patients

The facts

- SCT is a successful curative treatment for AML;
 - it produces a strong graft-versus-leukaemia effect and can cure even relapsed AML.
- Potential benefit, however, must be weighed against the risk of transplantation-related mortality and the late sequelae of transplantation.
- Outcomes post-relapse salvage therapy have improved.

The Questions all parents ask.

- What can go wrong?
- Does he really need this transplant to cure?

So?

Do we transplant?

No!

Not Yet

But his treatment should at least be recorded as part of an well planned clinical trial.

Summary

- Treatment of AML should be stratified according to risk groups
- Care should be taken not to over treat, Intermediate/undefined group, patients should be further investigated with the view to tailor therapy.
- All transplants and outcomes should be as a minimum be recorded on national register.

