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Chronic Myeloid Leukaemia Role of Transplantation

Jane Apperley

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Case History

- Male aged 30 presents with CML in 1st chronic phase
- Intermediate Sokal score
- HLA identical brother
- EBMT (Gratwohl) score = 1 (affected by age, disease phase, type of donor, donor-recipient genders, time from diagnosis)

1997

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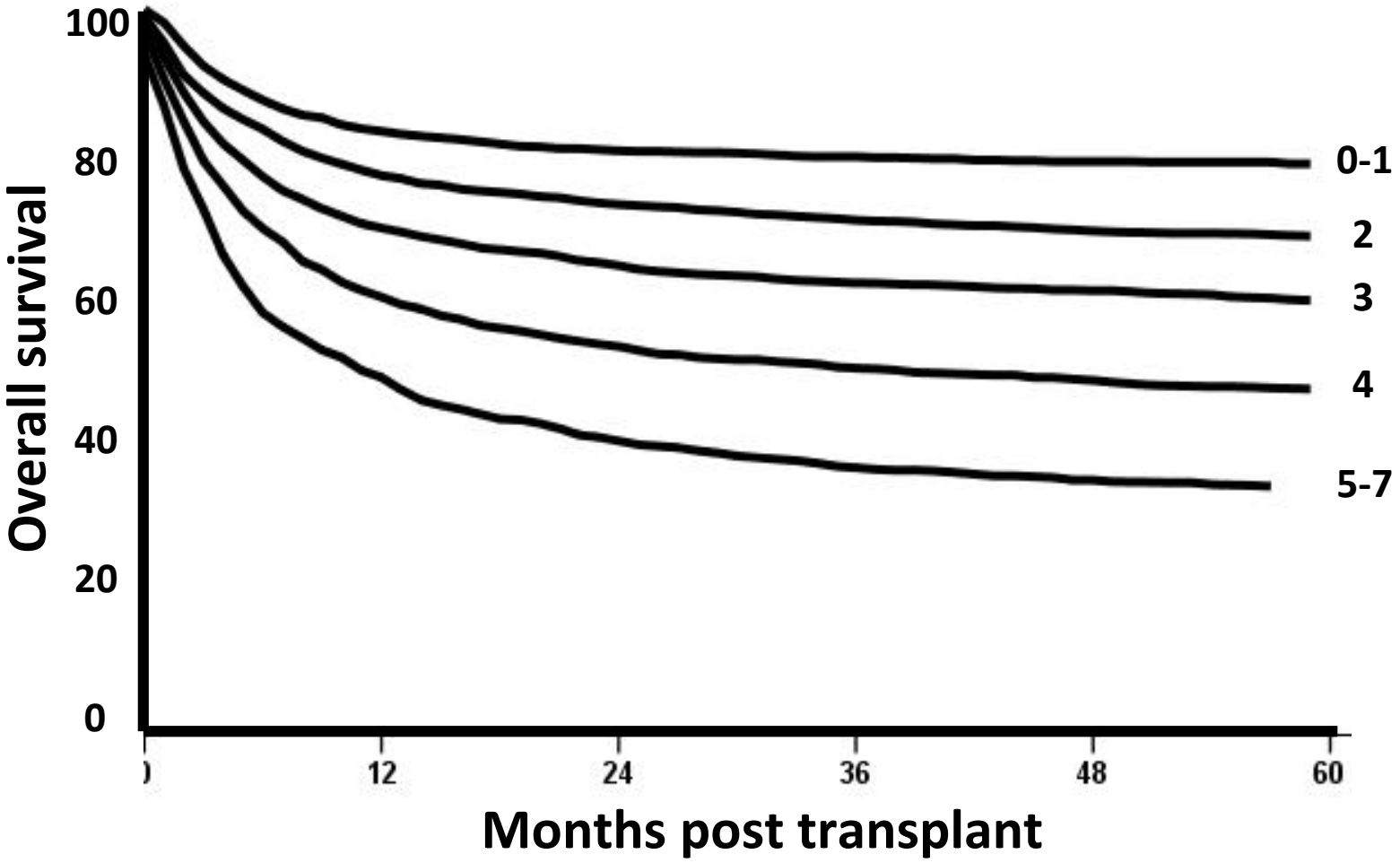
Outcome of allo-SCT for CML by EBMT risk score (2011)



Courtesy of R Brand, Oct 2011

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Case History: 2002

- Male aged 30 presents with CML in CP1
- Intermediate Sokal score
- HLA identical brother
- Allo-SCT or imatinib?

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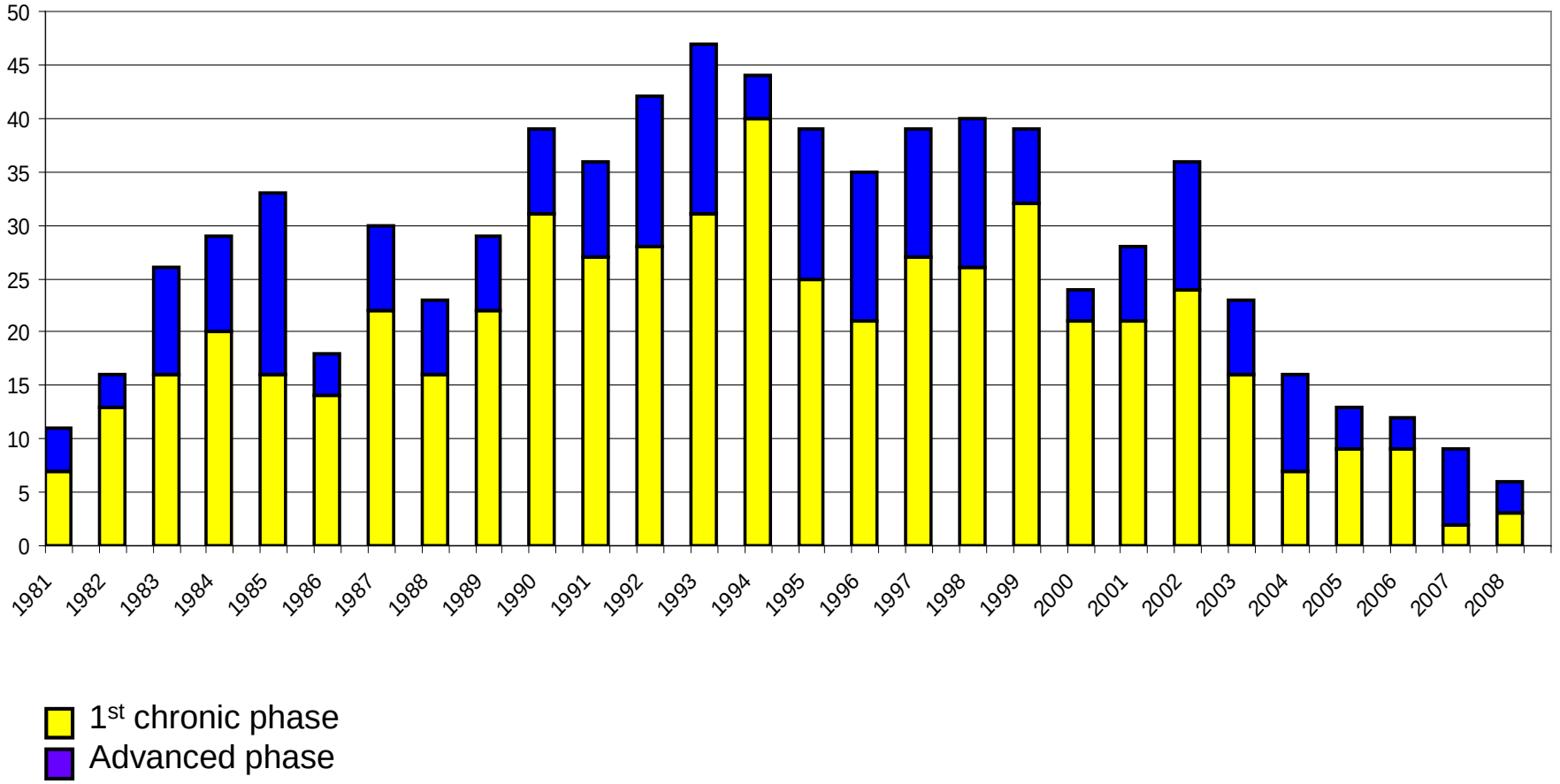
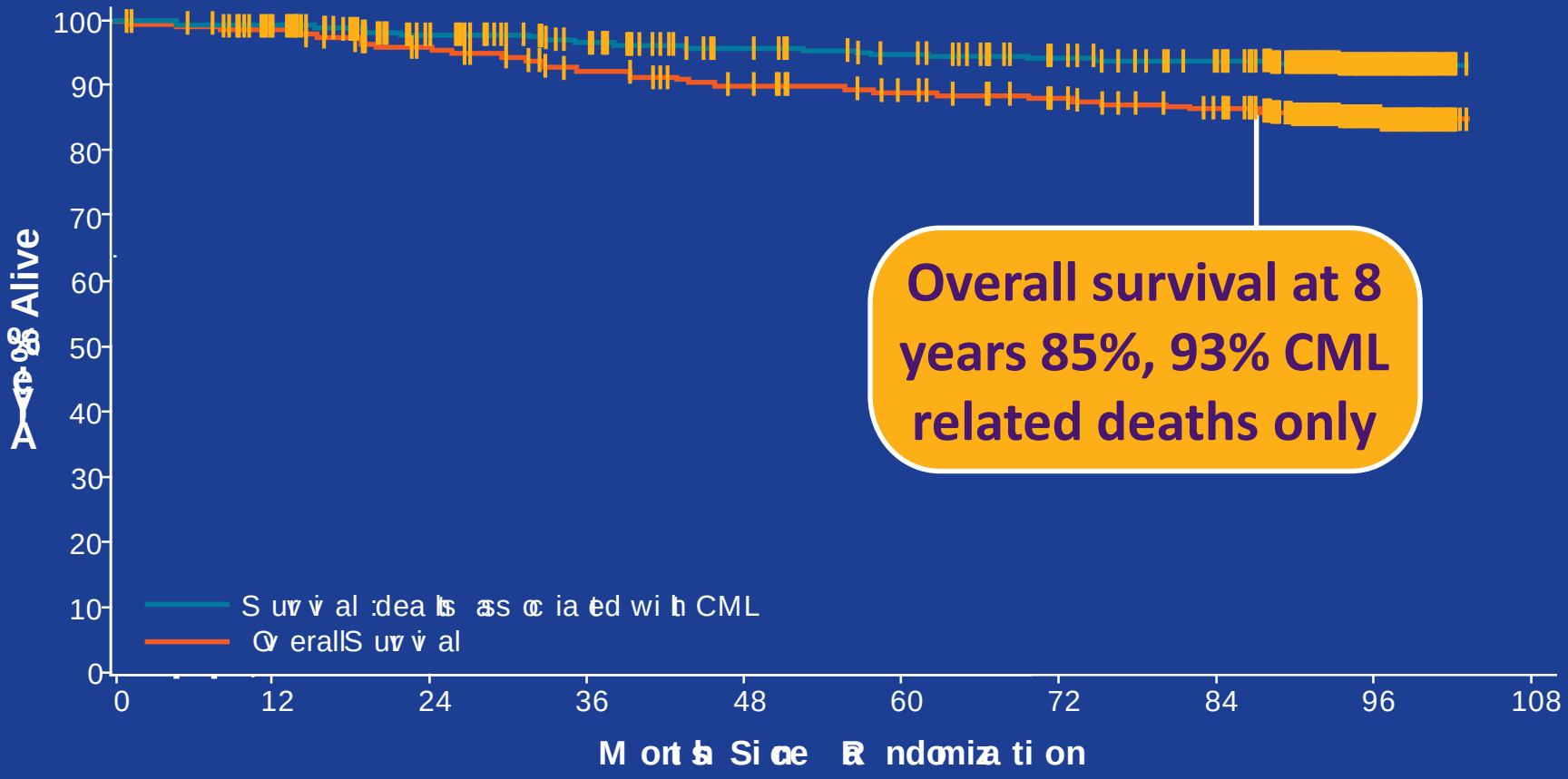
Transplant activity since 1980 at Imperial College



Hammersmith Hospital 1980 - 2007

IRIS 8-year update: overall survival



Deininger M, et al. Blood. 2009;114(22):462. Abstract # 1126.

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Case History: 2002

- Male aged 30 presents with CML CP1: intermediate Sokal score: HLA-identical brother
- Starts imatinib 400mg daily, tolerated well
- At 12 months 100% Ph-neg, RT-PCR 1.8%
- At 18 months, RT-PCR 11%
- Bone marrow confirms loss of complete cytogenetic response
- Patient insists that he is compliant

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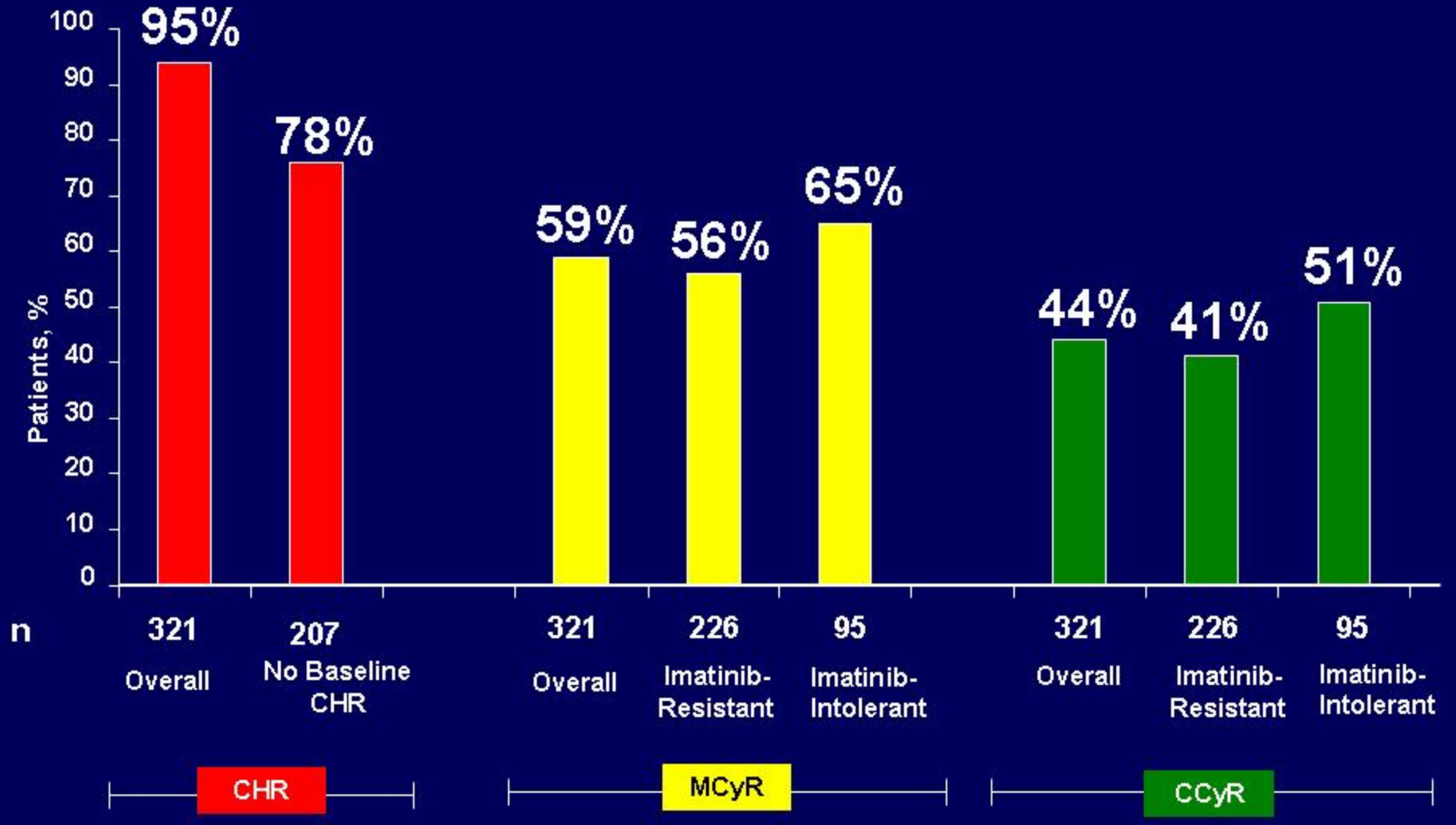
Case History: 2007

- Male aged 30 presents with CML CP1: intermediate Sokal score: HLA-identical brother
- Starts imatinib 400mg daily
- Achieves complete cytogenetic response at 12 months but loses this at 18 months
- Allo-SCT or a 2nd generationTKI (2GTKI), i.e. dasatinib or nilotinib?

2101 CML-CP: nilotinib for imatinib failure (n=321)



Kantarjian et al. Haematologica (14th Annual Congress of the EHA). 2009;94(s1): Abstract 0627.

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Failure after imatinib

Responders to 2GTKI are highly predictable

- **Sokal score at diagnosis**
- **Degree of cytogenetic response to imatinib**
- **Presence or absence of neutropenia on imatinib**
- **Short-term (3 months) response to 2GTKI**

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Case History: 2007

- Male aged 30 presents with CML CP1: intermediate Sokal score: HLA-identical brother
- Starts imatinib 400mg daily
- Achieves CCyR at 12 months but loses this at 18 months
- 2GTKI for 6 months, achieves CCyR but not major molecular response, drug is poorly tolerated
- Allo-SCT, stay on current therapy or change to a 3GTKI

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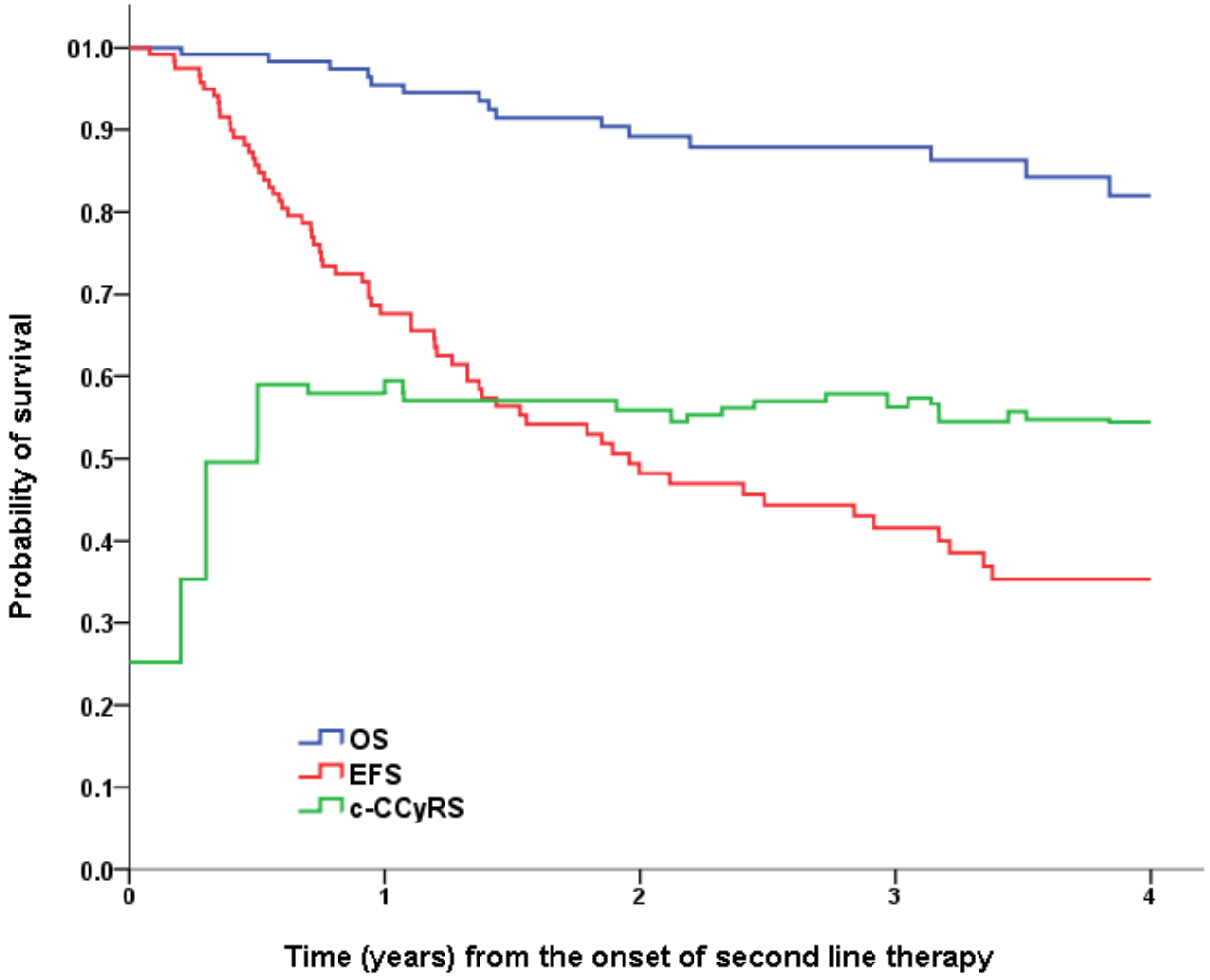
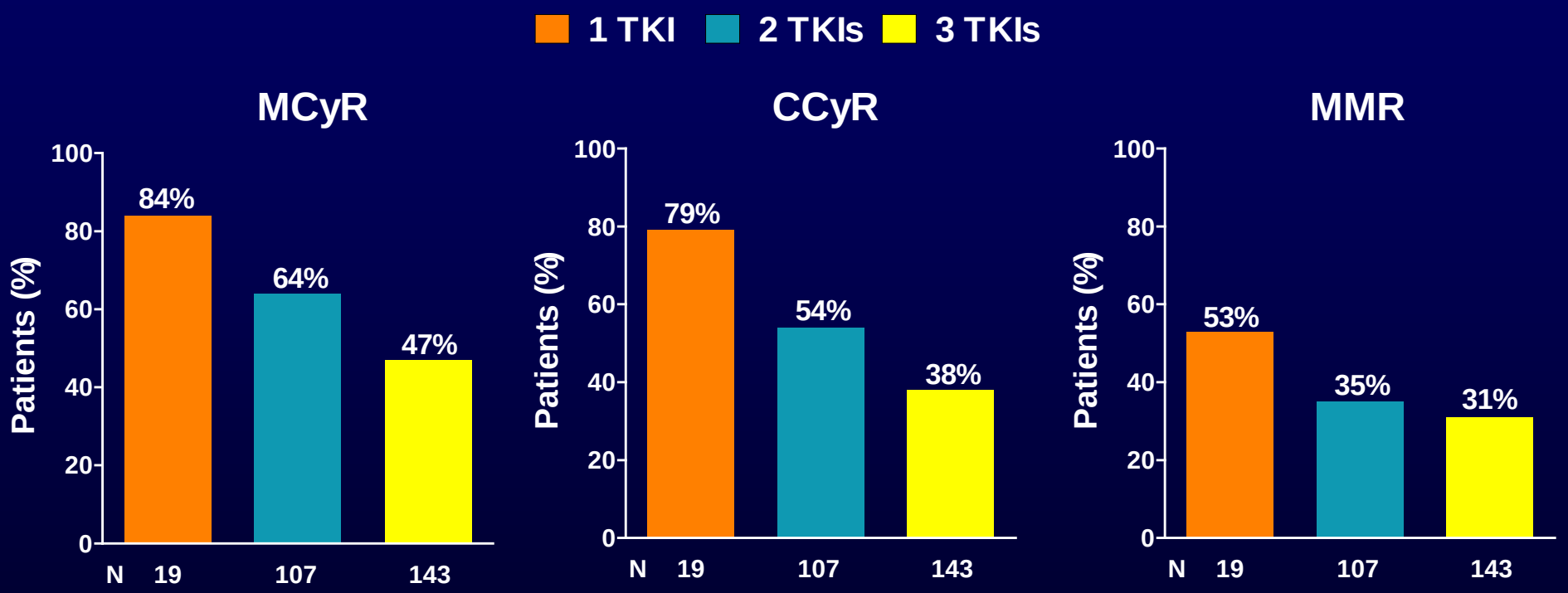
Outcome of 2GTKI in 110 patients



Milojkovic et al, Blood 2011

Ponatinib Phase 2 Study - PACE Response by Number of Prior Approved TKIs CP-CML



TKIs = imatinib, dasatinib, nilotinib

**Includes 3 CP-CML patients who were non-cohort assigned (post-imatinib, non-T315I), but treated*

Data as of 9 Nov 2012

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Case History: 2013

- Male aged 30 presents with CML in CP1
- Intermediate Sokal score
- HLA identical brother
- Imatinib or 2GTKI or clinical trial?

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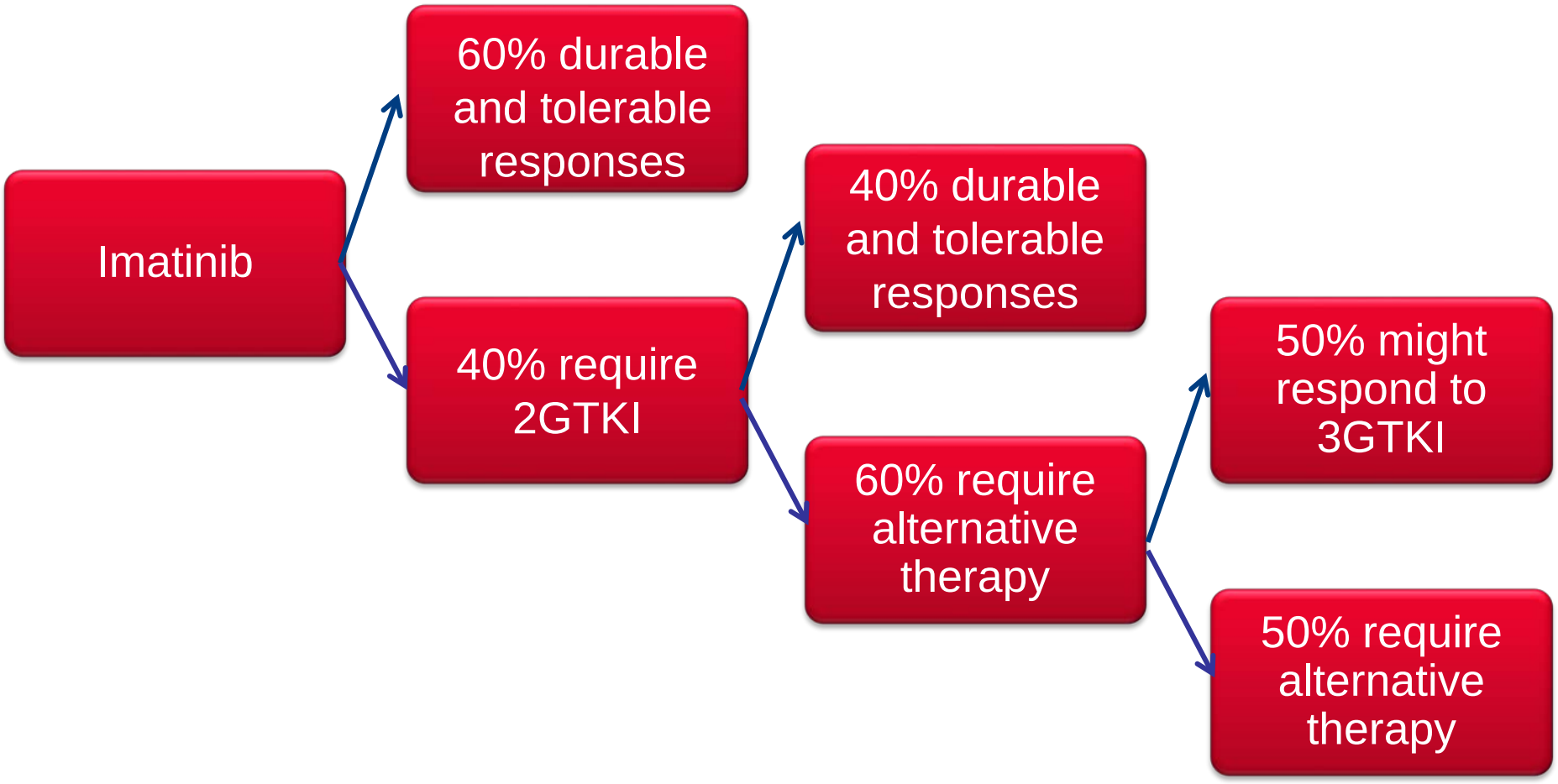
Outcome of frontline imatinib



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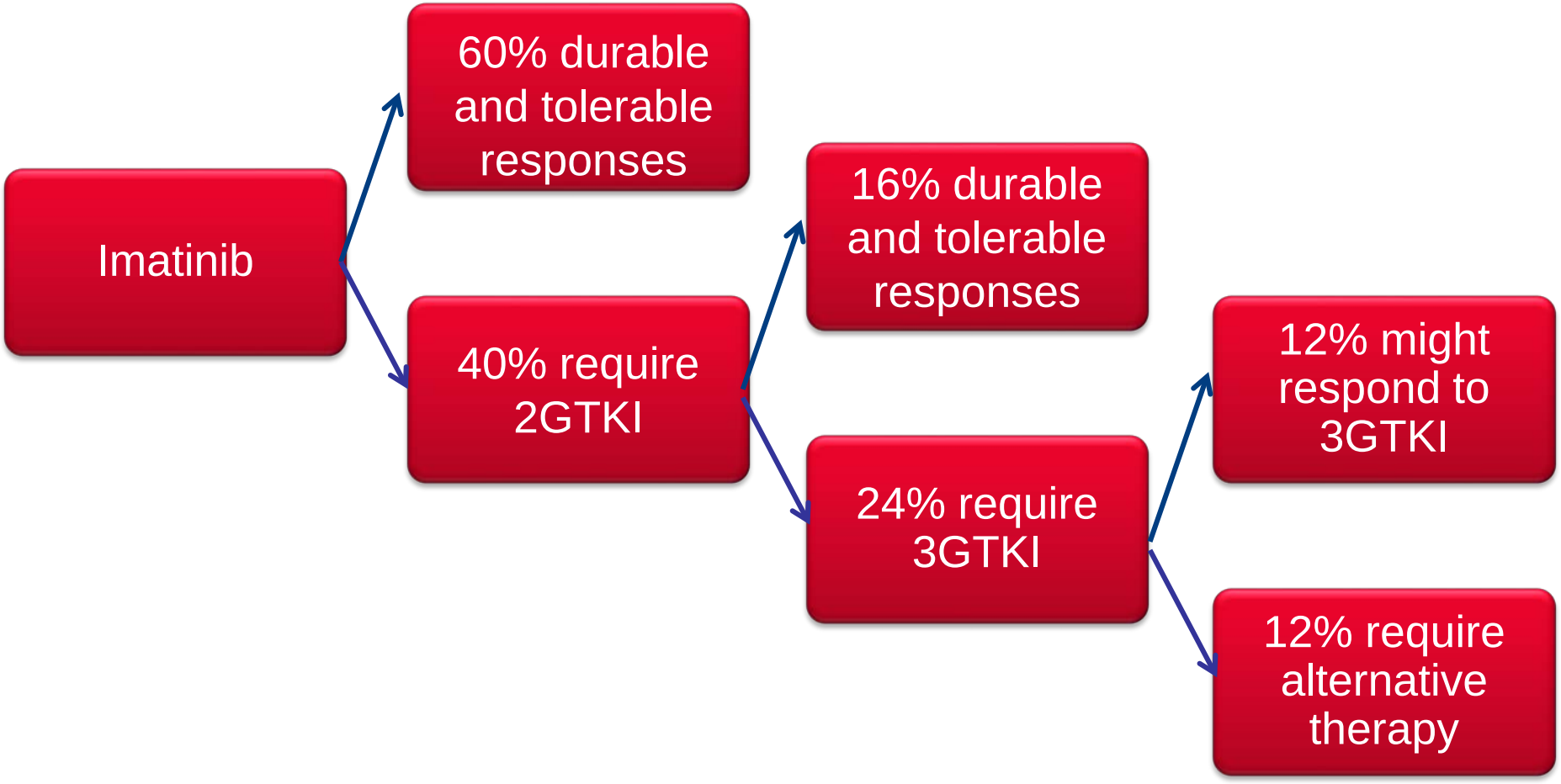
Outcome of frontline imatinib



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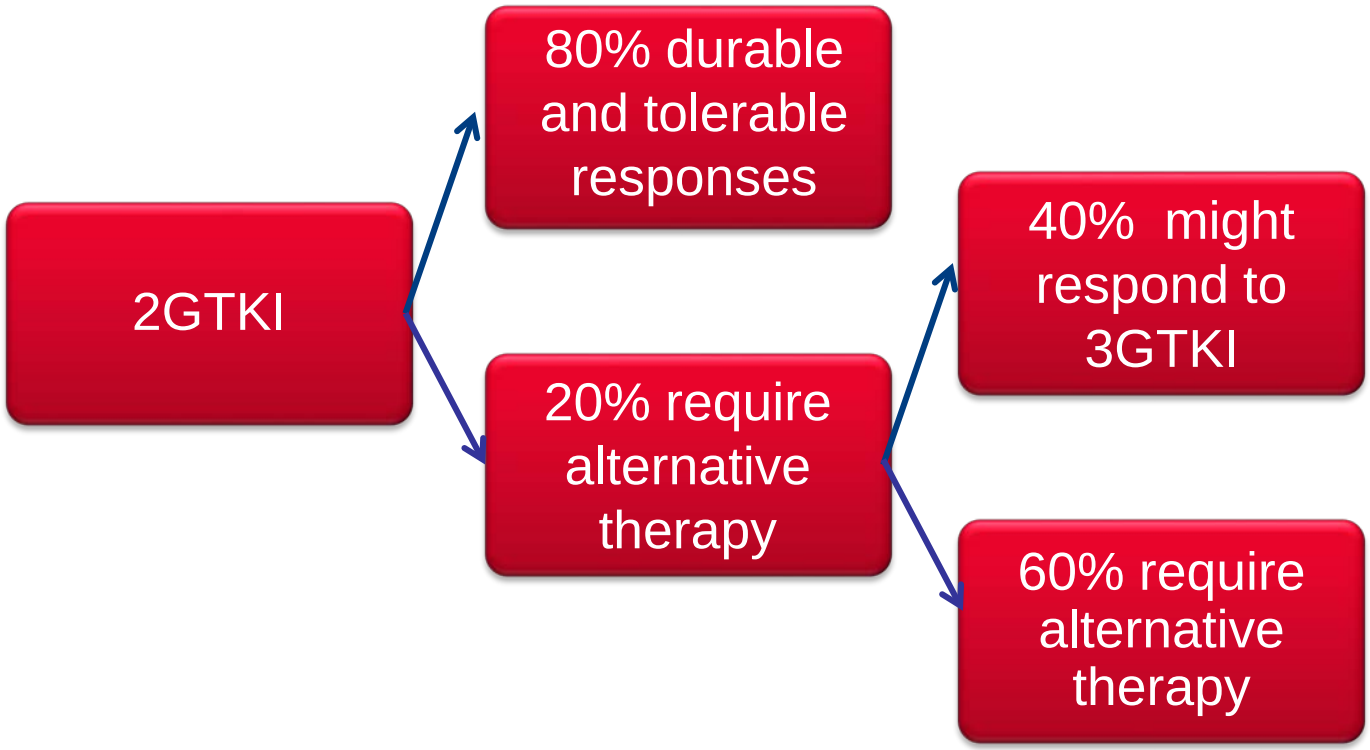
Outcome of frontline 2GTKI



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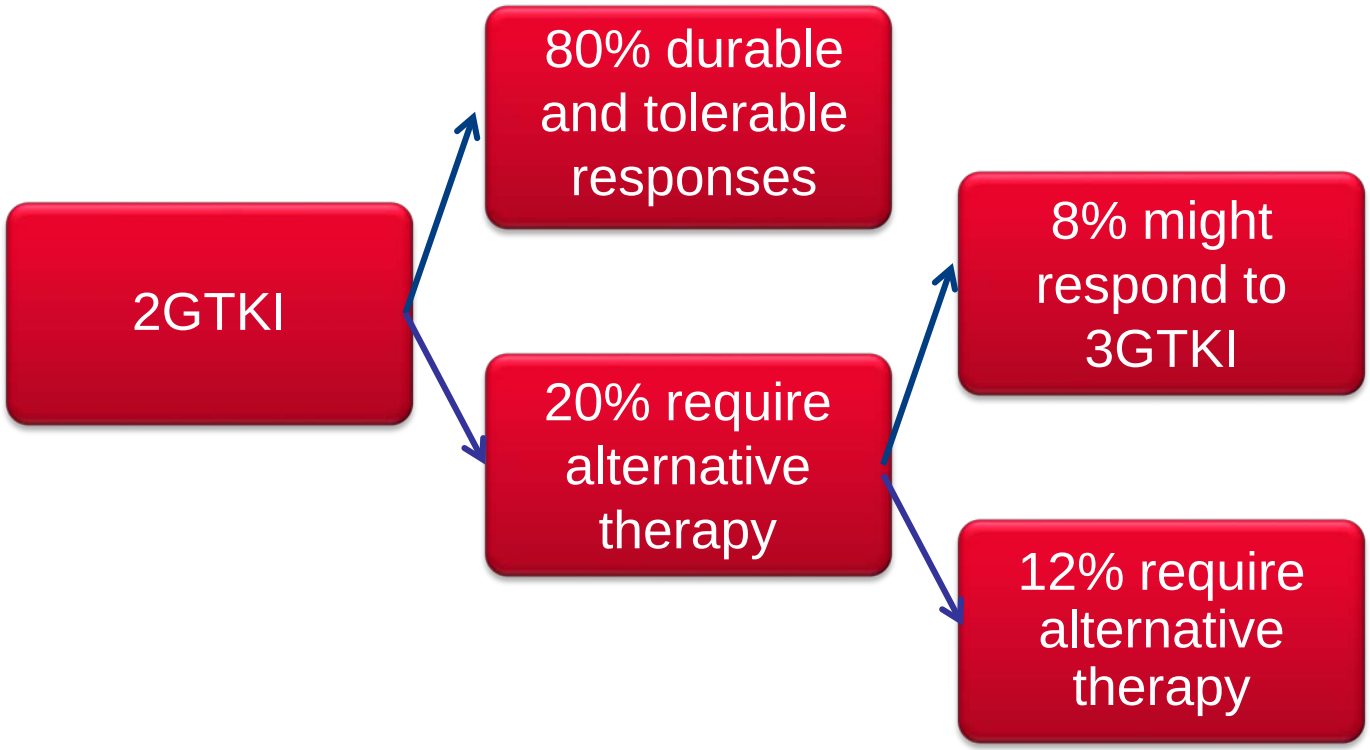
Outcome of frontline 2GTKI



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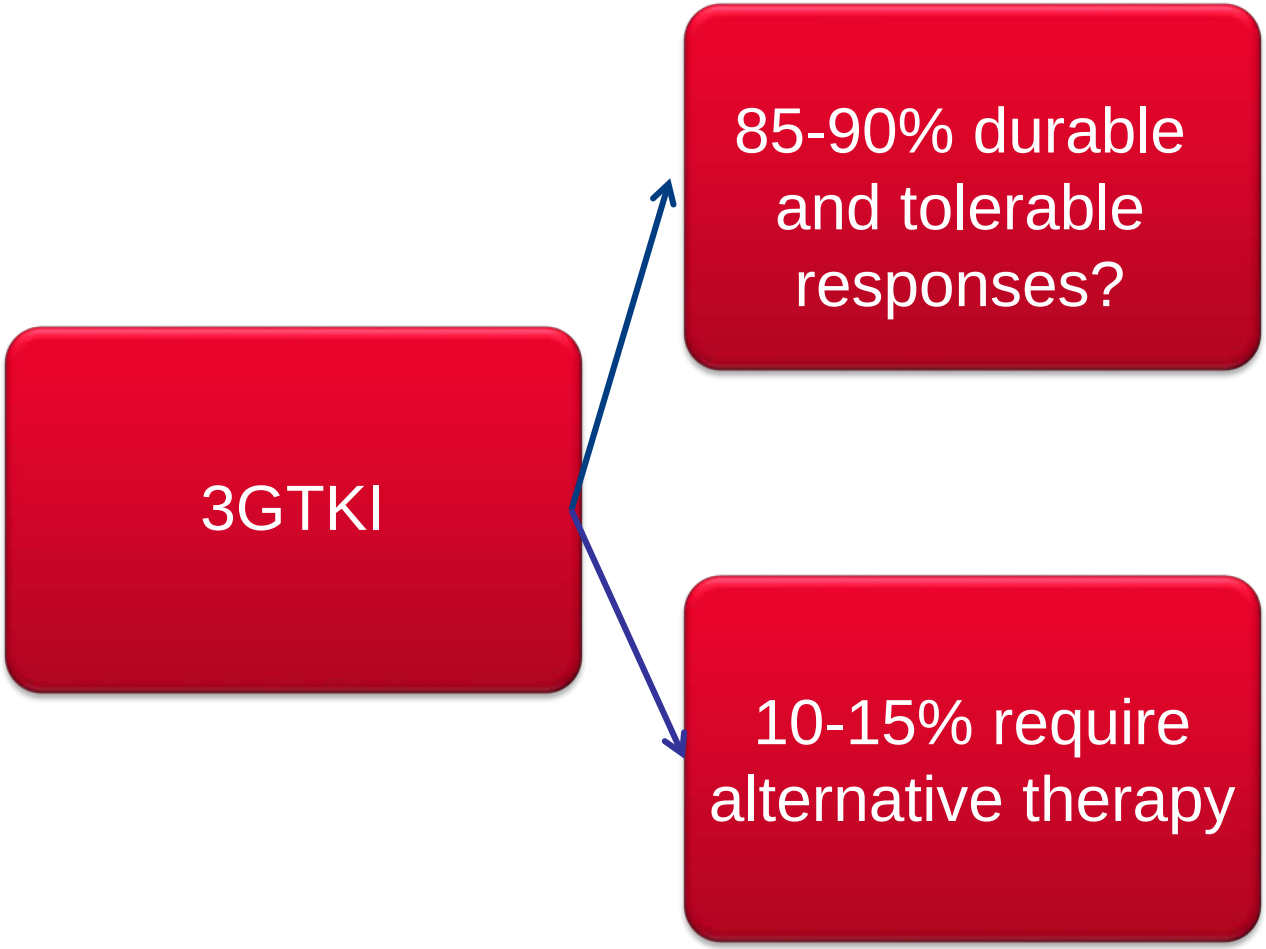
Outcome of frontline 3GTKI?



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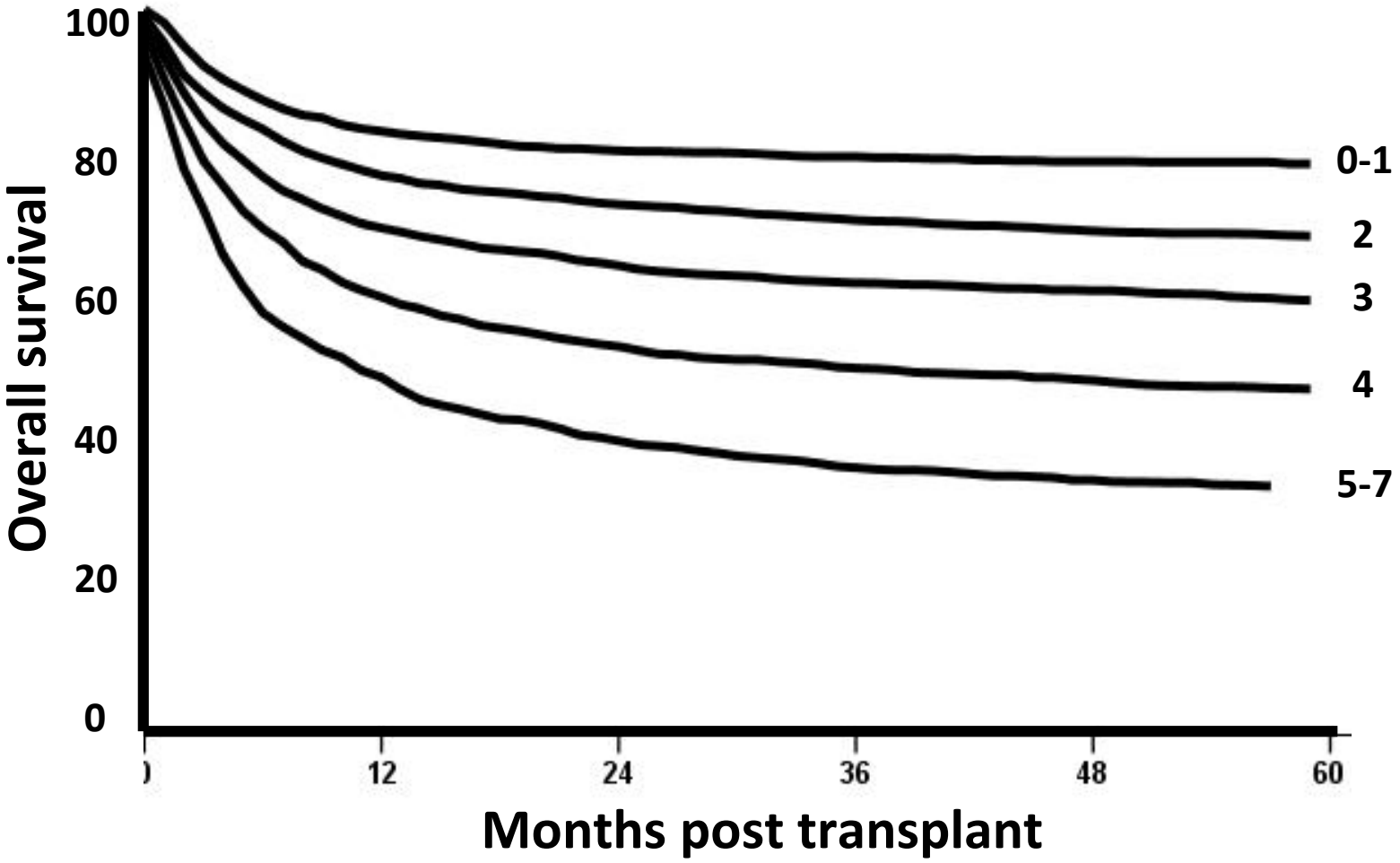

Courtesy of R Brand, Oct 2011

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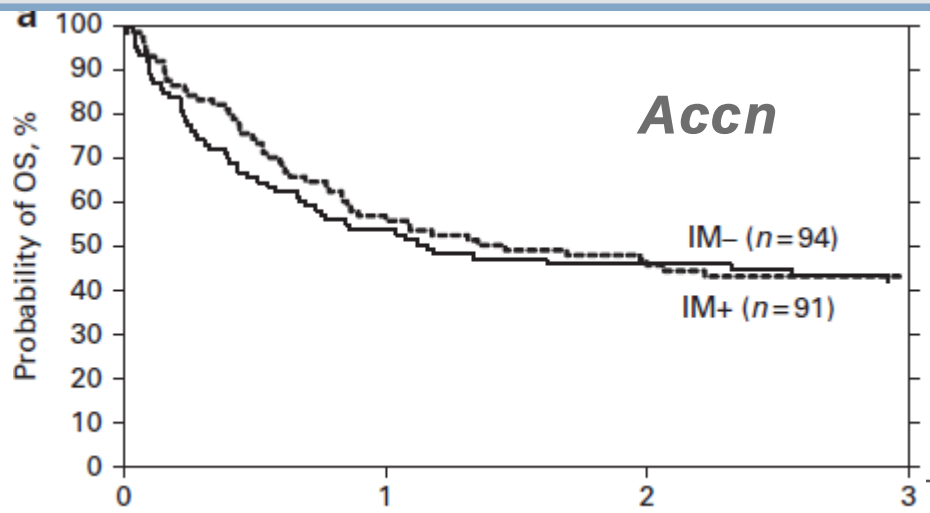
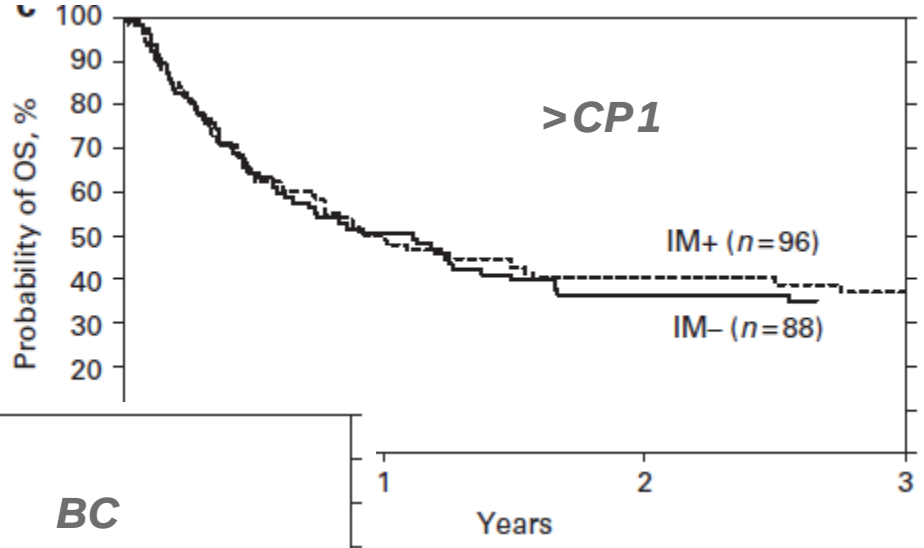
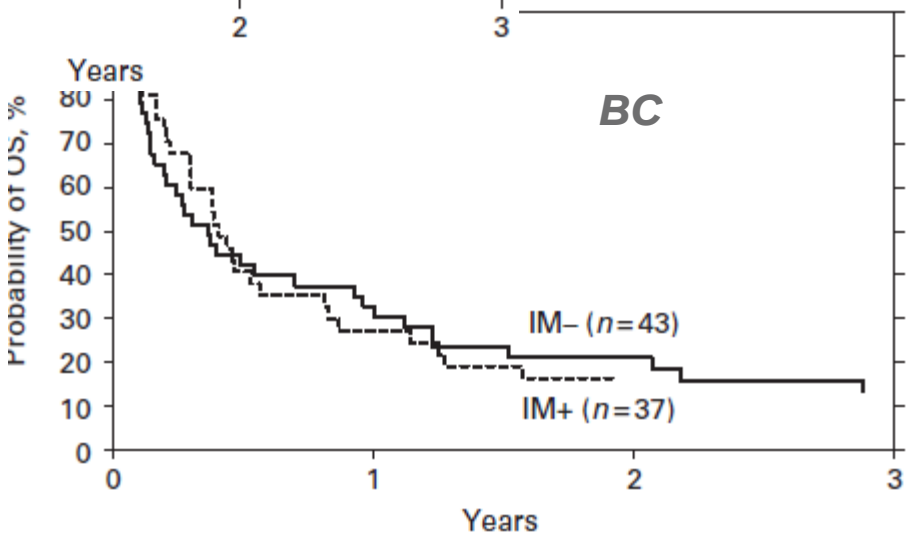
Outcome of transplantation for advanced phase disease







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