

***IGH@* translocations co-exist with other primary rearrangements in B-cell precursor acute lymphoblastic leukemia**

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Manuscript received on January 13, 2014. Manuscript accepted on April 30, 2014.
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Supplementary Table 1. Clinical, demographic data and diagnostic karyotypes for study cohort.

Patient ID	Age (yrs)/ Gender	WCC $\times 10^9/l$	IP	Treatment protocol	Survival #	Diagnostic Karyotype	<i>IGH@</i> break apart FISH	<i>IGH@</i> partner gene	Primary aberration	Primary aberration percentage	<i>IGH@</i> clone size to Primary **	Etiology
24390	3/M	4.3	BCP	UKALL2003 Regimen A	CR at 21 months	51,XY,+X,+11,+14,+21,+21c[7]	39%	<i>CRLF2</i> and Unknown	HEH	MLL:29% RUNX1:42%	N/Ap	Independent events
8447	8/M	4.5	BCP	UKALL2003 Regimen A	Relapse at 13 months. RIP at 20 months	51~52,XY,+X,-4,+5,+8,+9,-10,t(14;17)(q32;q21),+der(14)t(14;17),+19,+20,+21c,+22,inc[cp4]	57%	<i>IGF2BP1</i>	HEH	CEP X:43%	dominant	<i>IGH@</i> -t secondary event
23110	2/M	3.3	BCP	UKALL2003 Regimen A	CR at 34 months	54,XY,+X,+6,+10,+14,t(14;14)(q11.2;q32),+17,+18,+21,+21[10]	95%	<i>TRA/D@</i>	HEH	N/A	dominant	Undetermined~
22105	19/F	1.9	BCP	UKALL2003 Regimen B (in view of age)	CR at 43 months	57~58,XX,+X,+4,+6,+8,+9,del(12)(p13),+14,add(16)(p1),+17,+18,+21,+21,+2mar,inc[cp2]	37%	Unknown	HEH	CEP 18:47% CEP X:58%	dominant	<i>IGH@</i> -t secondary event
11438	3/M	8.8	BCP	UKALL2003 Regimen A	CR at 74 months	57~59,XY,+X,+4,+6,+8,+10,+17,+18,+21,+21,+3~5mar,inc[cp2]	26%	Unknown	HEH	CEP 17&18:40% CEP 4&10:62%	comparable	<i>IGH@</i> -t secondary event
10281	5/F	1.9	BCP	UKALL2003 Regimen A	CR at 21 months*	58,XX,+X,+4,+6,+7,+10,+14,+17,+18,+21,+21,inc[4]	27%	Unknown	HEH	CEP 18:79% CEP 6:80% CEP X:74%	Significant minor	<i>IGH@</i> -t secondary event
22420	2/F	28.4	BCP	UKALL2003 Regimen A	CR at 42 months	54,XX,+X,dup(1)(q2q4),+4,+6,+10,+14,+17,+18,+21[8]	12%	Unknown	HEH	N/A	Significant minor	<i>IGH@</i> -t secondary event
7143	44/F	5	Common	UKALLXII	CR at 45 months	57,XX,+X,+X,+4,+6,+10,+14,t(14;19)(q32;q13),ins(15)(q15),+17,+18,+21,+21,+mar[3]/57,idem,-17,+22[2]	82%	<i>CEBPA</i>	HEH	N/A	dominant	Undetermined
23544	3/M	49.6	BCP	UKALL2003 Regimen C	CR at 18 months	55,XY,+X,+Y,+6,+10,+14,add(14)(q32),add(16)(q24),+17,+18,+21,+21[8]	93%	Unknown	HEH	Unknown	dominant	NO MATERIAL

11520	3/M	4.9	BCP	UKALL2003 Regimen A	CR at 24 months (lost to follow-up)	46,XY[20]	32%	Unknown	<i>ETV6-RUNX1</i>	15%	N/Ap	Independent events
20951	5/F	6.8	BCP	UKALL2003 Regimen A	CR at 48 months	46,XX[20]	59%	Unknown	<i>ETV6-RUNX1</i>	75%	dominant	Undetermined~
2618	15/M	3.2	Common	UKALLXII	Relapse (bone marrow) at 24 months. RIP at 31 months	46,XY[15]	12%	Unknown	<i>ETV6-RUNX1</i>	79%	Significant minor	<i>IGH@-t</i> secondary event
10285	17/F	2	BCP	UKALL2003 Regimen B	CR at 73 months	89~93,XXXX,-3,del(6)(q1q2)x2,-9,add(10)(q2),add(11)(p1)x2,add(12)(p1)x2,-13,-13,-15,-17,+2~6mar[cp4]	49%	Unknown	<i>ETV6-RUNX1</i>	83%	dominant	Undetermined~
24063	11/M	6.4	BCP	UKALL2003 Regimen C	CR at 24 months	47~49,XY,t(2;14)(p11.2;q32),+10,+mar[cp6]	47%	<i>IGK@</i>	<i>ETV6-RUNX1</i>	67%	dominant	NO MATERIAL
12084	3/M	34.9	BCP	UKALL2003 Regimen A	CR at 74 months	46,XY,?add(5)(p1),?add(8)(p2),?add(11)(p1),add(12)(p13)[5]	31%	Unknown	<i>ETV6-RUNX1</i>	95%	Significant minor	NO MATERIAL
9493	1/M	10.5	BCP	UKALL2003 Regimen A	CR at 76 months	46,XY[20]	30%	Unknown	<i>ETV6-RUNX1</i>	64%	comparable	NO MATERIAL
19600	7/M	5	BCP	UKALL2003 Regimen A	CR at 61 months	46,XY,add(3)(q2?7),del(3)(q2?1),?del(5)(q2?2q3?1),del(6)(q21),add(12)(p13)[12]	6%**	Unknown	<i>ETV6-RUNX1</i>	82%	minor	NO MATERIAL
3737	22/F	2.1	Common	UKALLXII	Relapse (Other) at 18 months. Relapse (CNS) at 40 months. RIP at 54 months	46,XX,t(9;22)(q34;q11),add(14)(q12)[4]	76%	Unknown	<i>BCR-ABL1</i>	12%	N/Ap	Independent events
21733	64/M	UK	UK	UKALLXIIR	UK	46,XY[10]	9%**	Unknown	<i>BCR-ABL1</i>	90%	minor	<i>IGH@-t</i>

												secondary event
10859	34/F	80.6	UK	UKALLXIIR (IMATINIB)	RIP at 6 months	46,XX,t(9;22)(q34;q11)[1]/46,s,t(14;20)(q32;q13)[7]/48,sdl1,+4,+8[cp3]	93%	CEBPB	<i>BCR-ABL1</i>	92%	dominant	<i>IGH@-t</i> secondary event
22589	20/F	6	BCP	UKALL2003 Regimen B^	SCT at 3 months. RIP 34 months	46,XX[6]	96%	Unknown	<i>BCR-ABL1</i>	100%	dominant	NO MATERIAL
7303	43/F	34.8	BCP	UKALLXIIR (IMATINIB)	RIP at 1 month (ALL and infection)	45,XX,t(9;22)(q34;q11),-10	8%**	Unknown	<i>BCR-ABL1</i>	83%	minor	NO MATERIAL
22708	8/M	186.8	BCP	UKALL2003 Regimen C - trans to EsPhALL	CR at 2 months	46,XY,t(9;22)(q34;q11.2)[1]/45,XY,der(7;9)(q10;q10)t(9;22)(q34;q11.2),der(22)t(9;22)[7]	5%**	Unknown	<i>BCR-ABL1</i>	62%	minor	NO MATERIAL
11061	11/M	3.3	BCP	UKALL2003 Regimen C	CR at 70 months	45~46,XY,add(1)(q3),-4,add(9)(q2),add(11)(q2),add(13)(q3),-20,-21,+3mar[cp8]/46,XY[18]	47%	Unknown	iAMP21	96%	comparable	<i>IGH@-t</i> secondary event
19578	11/M	1.5	BCP	UKALL2003 Regimen C	Relapse at 47 months. Unrelated SCT at 50 months.	48,XY,+X,?t(6;20)(p1;q1),?t(7;9)(p1;p2),i(9)(q10),+12,der(21)dup(21)(q?) [9]	6%**	Unknown	iAMP21	50%	minor	NO MATERIAL
5759	18/M	2.3	Common	UKALLXII	MUD BMT at 11 months. RIP at 13 months	46,XY,del(11)(q23),-13,-16,dup(21)(q?),+mar1,+mar2[cp4]	8%**	Unknown	iAMP21	86%	minor	NO MATERIAL
21940	21/F	284	BCP	UKALL2003 Regimen B	Unrelated SCT at 4 months. RIP at 14 months	46,XX,t(4;11)(q21;q23),del(9)(q1q3)[20]/50,XX,t(4;11)(q21;q23),+6,+13,-15,+22,+2mar[3]	13%	Unknown	<i>MLL</i>	52%	Significant minor	<i>IGH@-t</i> secondary event

20390	23/M	266	BCP	UKALL2003 Regimen C	Unrelated SCT at 5 months. RIP at 15 months	46,XY,t(4;11)(q21;q23)[10]	6%**	Unknown	<i>MLL</i>	96%	minor	NO MATERIAL
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Abbreviations: M, male; F, female; IP, Immunophenotype; BCP, B-cell precursor; CR, complete remission; SCT, stem cell transplant; MUD, matched unrelated donor; BMT, bone marrow transplant; RIP, died; HeH, High hyperdiploidy; IGH@-t, IGH@ translocation; N/A, not available; N/Ap, not applicable.

*Second tumour diagnosed 19 months after presentation of BCP-ALL.

**dominant is the largest clone, significant minor is greater or equal to 15% of cells and minor sub-clones are those less than 15% of cells and close to the false positive level.

~Undetermined as the IGH@ FISH probe signal sensitivity was lower due to a variant signal pattern

Number of months worked out from treatment start date. CR months worked out from treatment start date to date last seen in clinic.

^Patient was initially treated on Regimen B, however was removed from the trail as BCR-ABL1 positive. This patient could not enter the EsPhALL trial as the upper limit was 18 years. This patient would therefore have been treated as non-trail.

The normal cells have been omitted from the abnormal karyotype strings