**Supplementary Table 1.** Organ involvement among various age cohorts; percentages are also provided within B- and T-ALL cohorts; p-value is also indicated.

| | Age cohorts (yrs) | | | | | | | | | p |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1-5 | 5-10 | 10-14 | 14-18 | 18-25 | 25-30 | 30-40 | 40-50 | 50-60 | |
| **Mediastinum enlargement (%)** | 4.16 | 8.11 | 11.26 | 10.74 | 11.07 | 8.93 | 9.59 | 4.12 | 3.14 | <.0001 |
| B-ALL (%) | 1.73 | 1.29 | 1.26 | 1.61 | 0.53 | 1.16 | 0 | 1.40 | 0 | n.a. |
| T-ALL (%) | 49.27 | 43.10 | 45.3 | 40.79 | 41.54 | 34.62 | 33.77 | 25 | 26.92 | 0.19 |
| | | | | | | | | | | |
| **Spleen enlargement (%)** | 27.26 | 29.79 | 33.92 | 32 | 30.99 | 27.43 | 28.85 | 26.18 | 21.9 | 0.028 |
| B-ALL (%) | 25.56 | 26.42 | 29.29 | 26.91 | 26.55 | 25.58 | 27.22 | 24.51 | 23.78 | 0.90 |
| T-ALL (%) | 57.89 | 48.84 | 50.43 | 49.33 | 43.08 | 33.33 | 32.88 | 37.93 | 8.00 | 0.0003 |
| | | | | | | | | | | |
| **Liver enlargement (%)** | 22.25 | 20.92 | 20.86 | 16.93 | 14.29 | 8.85 | 15.48 | 14.19 | 10.33 | <.0001 |
| B-ALL (%) | 21.26 | 19.64 | 17.93 | 15.66 | 10.59 | 5.88 | 13.48 | 15.00 | 10.58 | <.0001 |
| T-ALL (%) | 41.05 | 28.74 | 31.3 | 21.74 | 24.59 | 17.86 | 20.27 | 14.29 | 8.33 | 0.006 |
| | | | | | | | | | | |
| **CNS involvement** | 1.05 | 2.34 | 3.91 | 1.29 | 2.36 | 5.0 | 2.58 | 2.5 | 4.91 | n.a. |
| B-ALL (%) | 0.95 | 1.07 | 2.03 | 0. | 1.81 | 5.48 | 2.98 | 2.86 | 5.56 | n.a. |
| T-ALL (%) | 3.19 | 8.67 | 10.34 | 5.41 | 4.35 | 3.70 | 1.54 | 0.00 | 0.00 | n.a. |

n.a. = not applicable since Chi-Square might not represent a valid test since some subgroups have expected counts less than five and Fisher test is not doable because the software cannot computed exact values.

**Supplementary Table 2**. Association between *ETV6/RUNX1* rearrangement and WBC

| Whole cohort | | | |
|---|---|---|---|
| *ETV6/RUNX1* | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 2136 | 462 | Chi-Square 0.0001 |
| **WBC ≥50x10⁹/L** | 533 | 68 | |

| Age cohort: 1-5 yrs | | | |
|---|---|---|---|
| *ETV6/RUNX1* | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 775 | 284 | Chi-Square 0.2377 |
| **WBC ≥50x10⁹/L** | 177 | 53 | |

| Age cohort: 5-10 yrs | | | |
|---|---|---|---|
| *ETV6/RUNX1* | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 452 | 150 | Chi-Square 0.098 |
| **WBC ≥50x10⁹/L** | 62 | 12 | |

| Age cohort: 10-14 yrs | | | |
|---|---|---|---|
| *ETV6/RUNX1* | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 214 | 17 | Fisher test 1 |
| **WBC ≥50x10⁹/L** | 50 | 3 | |

| Age cohort: 14-18 yrs | | | |
|---|---|---|---|
| *ETV6/RUNX1* | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 131 | 8 | Fisher test 0.3534 |
| **WBC ≥50x10⁹/L** | 31 | 0 | |

| Age cohort: 18-25 yrs | | | |
|---|---|---|---|
| *ETV6/RUNX1* | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 104 | 2 | Fisher test 1 |
| **WBC ≥50x10⁹/L** | 28 | 0 | |

| Age cohort: 25-30 yrs | | | |
|---|---|---|---|
| *ETV6/RUNX1* | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 50 | 1 | Fisher test 1 |
| **WBC ≥50x10⁹/L** | 20 | 0 | |

| Age cohort: 30-40 yrs | | | |
|---|---|---|---|
| *ETV6/RUNX1* | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 121 | 0 | Not applicable |
| **WBC ≥50x10⁹/L** | 50 | 0 | |

| Age cohort: 40-50 yrs | | | |
|---|---|---|---|
| *ETV6/RUNX1* | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 140 | 0 | Not applicable |
| **WBC ≥50x10⁹/L** | 64 | 0 | |

| Age cohort: 50-60 yrs | | | |
|---|---|---|---|
| *ETV6/RUNX1* | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 149 | 0 | Not applicable |
| **WBC ≥50x10⁹/L** | 51 | 0 | |

**Supplementary Table 3**. Association between *E2A/PBX1* rearrangement and WBC count in B-ALL.

| Whole cohort | | | |
|---|---|---|---|
| *E2A/PBX1* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 1597 | 54 | Chi-square 0.83 |
| WBC ≥50x10$^9$/L | 442 | 14 | |

| Age cohort: 1-5 yrs | | | |
|---|---|---|---|
| *E2A/PBX1* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 515 | 9 | Fisher test 0.179 |
| WBC ≥50x10$^9$/L | 131 | 5 | |

| Age cohort: 5-10 yrs | | | |
|---|---|---|---|
| *E2A/PBX1* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 277 | 11 | Fisher test 0.654 |
| WBC ≥50x10$^9$/L | 36 | 2 | |

| Age cohort: 10-14 yrs | | | |
|---|---|---|---|
| *E2A/PBX1* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 74 | 6 | Fisher test 1 |
| WBC ≥50x10$^9$/L | 31 | 2 | |

| Age cohort:14-18 yrs | | | |
|---|---|---|---|
| *E2A/PBX1* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 80 | 5 | Fisher test 1 |
| WBC ≥50x10$^9$/L | 19 | 1 | |

| Age cohort:18-25 yrs | | | |
|---|---|---|---|
| *E2A/PBX1* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 143 | 5 | Fisher test 1 |
| WBC ≥50x10$^9$/L | 33 | 1 | |

| Age cohort:25-30 yrs | | | |
|---|---|---|---|
| *E2A/PBX1* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 60 | 1 | Fisher test 1 |
| WBC ≥50x10$^9$/L | 21 | 0 | |

| Age cohort:30-40 yrs | | | |
|---|---|---|---|
| *E2A/PBX1* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 136 | 9 | Fisher test 0.4603 |
| WBC ≥50x10$^9$/L | 51 | 1 | |

| Age cohort: 40-50 yrs | | | |
|---|---|---|---|
| *E2A/PBX1* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 152 | 3 | Fisher test 0.6363 |
| WBC ≥50x10$^9$/L | 64 | 2 | |

| Age cohort:50-60 yrs | | | |
|---|---|---|---|
| *E2A/PBX1* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 160 | 5 | Fisher test 0.3331 |
| WBC ≥50x10$^9$/L | 56 | 0 | |

**Supplementary Table 4**. Association between *MLL/AF4* rearrangement and WBC count in B-ALL.

| Whole cohort | | | |
|---|---|---|---|
| *MLL/AF4* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 3360 | 28 | Chi-square <0.0001 |
| WBC ≥50x10$^9$/L | 635 | 71 | |

| Age cohort: 1-5 yrs | | | |
|---|---|---|---|
| *MLL/AF4* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 1394 | 2 | Fisher Test 4.085E-04 |
| WBC ≥50x10$^9$/L | 271 | 6 | |

| Age cohort: 5-10 yrs | | | |
|---|---|---|---|
| *MLL/AF4* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 770 | 0 | Fisher Test 9.34E-07 |
| WBC ≥50x10$^9$/L | 81 | 6 | |

| Age cohort: 10-14 yrs | | | |
|---|---|---|---|
| *MLL/AF4* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 296 | 1 | Fisher Test 8.058E-07 |
| WBC ≥50x10$^9$/L | 54 | 9 | |

| Age cohort: 14-18 yrs | | | |
|---|---|---|---|
| *MLL/AF4* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 190 | 2 | Fisher Test 0.0393 |
| WBC ≥50x10$^9$/L | 38 | 3 | |

| Age cohort: 18-25 yrs | | | |
|---|---|---|---|
| *MLL/AF4* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 167 | 1 | Fisher Test 3.09E-05 |
| WBC ≥50x10$^9$/L | 31 | 7 | |

| Age cohort: 25-30 yrs | | | |
|---|---|---|---|
| *MLL/AF4* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 69 | 2 | Fisher Test 0.0264 |
| WBC ≥50x10$^9$/L | 18 | 4 | |

| Age cohort: 30-40 yrs | | | |
|---|---|---|---|
| *MLL/AF4* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 158 | 2 | Fisher Test 1.87E-08 |
| WBC ≥50x10$^9$/L | 39 | 15 | |

| Age cohort: 40-50 yrs | | | |
|---|---|---|---|
| *MLL/AF4* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 151 | 11 | Chi-Square 0.0003 |
| WBC ≥50x10$^9$/L | 51 | 16 | |

| Age cohort: 50-60 yrs | | | |
|---|---|---|---|
| *MLL/AF4* | | | |
| | Negative | Positive | p |
| WBC <50x10$^9$/L | 165 | 7 | Fisher Test 0.1787 |
| WBC ≥50x10$^9$/L | 52 | 5 | |

**Supplementary Table 5**. Association between *BCR/ABL* rearrangement and WBC count in B-ALL.

| Whole cohort | | | |
|---|---|---|---|
| ***BCR/ABL*** | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 3140 | 296 | Chi-square <0.0001 |
| **WBC ≥50x10⁹/L** | 557 | 158 | |

| Age cohort: 1-5 yrs | | | |
|---|---|---|---|
| ***BCR/ABL*** | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 1381 | 12 | Fisher Test 9.61E-07 |
| **WBC ≥50x10⁹/L** | 260 | 16 | |

| Age cohort: 5-10 yrs | | | |
|---|---|---|---|
| ***BCR/ABL*** | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 753 | 19 | Fisher Test 0.0859 |
| **WBC ≥50x10⁹/L** | 82 | 5 | |

| Age cohort: 10-14 yrs | | | |
|---|---|---|---|
| ***BCR/ABL*** | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 289 | 9 | Fisher Test 1.078E-04 |
| **WBC ≥50x10⁹/L** | 53 | 11 | |

| Age cohort: 14-18 yrs | | | |
|---|---|---|---|
| ***BCR/ABL*** | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 193 | 7 | Fisher Test 0.0035 |
| **WBC ≥50x10⁹/L** | 34 | 7 | |

| Age cohort: 18-25 yrs | | | |
|---|---|---|---|
| ***BCR/ABL*** | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 159 | 21 | Chi-Square 0.0128 |
| **WBC ≥50x10⁹/L** | 30 | 11 | |

| Age cohort: 25-30yrs | | | |
|---|---|---|---|
| ***BCR/ABL*** | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 60 | 16 | Chi-Square 0.0447 |
| **WBC ≥50x10⁹/L** | 14 | 10 | |

| Age cohort: 30-40yrs | | | |
|---|---|---|---|
| ***BCR/ABL*** | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 109 | 60 | Chi-Square 0.3241 |
| **WBC ≥50x10⁹/L** | 32 | 24 | |

| Age cohort: 40-50yrs | | | |
|---|---|---|---|
| ***BCR/ABL*** | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 100 | 68 | Chi-Square 0.2986 |
| **WBC ≥50x10⁹/L** | 36 | 33 | |

| Age cohort: 50-60 yrs | | | |
|---|---|---|---|
| ***BCR/ABL*** | | | |
| | **Negative** | **Positive** | **p** |
| **WBC <50x10⁹/L** | 96 | 84 | Chi-Square 0.0009 |
| **WBC ≥50x10⁹/L** | 16 | 41 | |

**Supplementary Table 6**. Association between *ETV6/RUNX1* rearrangement and the degree of B-cell differentiation.

| Whole cohort | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *ETV6/RUNX1* negative | 170 | 1386 | 624 | Chi-square <.0001 |
| *ETV6/RUNX1* positive | 6 | 354 | 124 | |

| Age cohort: 1-5 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *ETV6/RUNX1* negative | 30 | 611 | 278 | Chi-square 0.0254 |
| *ETV6/RUNX1* positive | 5 | 231 | 75 | |

| Age cohort: 5-10 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *ETV6/RUNX1* negative | 15 | 340 | 126 | Chi-square 0.2508 |
| *ETV6/RUNX1* positive | 1 | 106 | 41 | |

| Age cohort: 10-14 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *ETV6/RUNX1* negative | 23 | 154 | 67 | Fisher test 0.4 |
| *ETV6/RUNX1* positive | 0 | 14 | 4 | |

| Age cohort:14-18 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *ETV6/RUNX1* negative | 17 | 97 | 21 | Fisher test 0.1985 |
| *ETV6/RUNX1* positive | 0 | 2 | 2 | |

| Age cohort:18-25 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *ETV6/RUNX1* negative | 11 | 37 | 22 | Fisher test 0.2328 |
| *ETV6/RUNX1* positive | 0 | 0 | 2 | |

| Age cohort:25-30 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *ETV6/RUNX1* negative | 8 | 17 | 7 | Fisher test 1 |
| *ETV6/RUNX1* positive | 0 | 1 | 0 | |

| Age cohort:30-40 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *ETV6/RUNX1* negative | 18 | 44 | 29 | not applicable |
| *ETV6/RUNX1* positive | 0 | 0 | 0 | |

| Age cohort: 40-50 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *ETV6/RUNX1* negative | 34 | 39 | 38 | not applicable |
| *ETV6/RUNX1* positive | 0 | 0 | 0 | |

| Age cohort:50-60 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *ETV6/RUNX1* negative | 14 | 47 | 36 | not applicable |
| *ETV6/RUNX1* positive | 0 | 0 | 0 | |

**Supplementary Table 7**. Association between *E2A/PBX1* rearrangement and the degree of B-cell differentiation.

| Whole cohort | | | |
|---|---|---|---|
| | B1 | B2 | B3 | p |
| *E2A/PBX1* negative | 161 | 784 | 552 | Chi-square <.0001 |
| *E2A/PBX1* positive | 0 | 12 | 39 | |

| Age cohort: 1-5 yrs | | | |
|---|---|---|---|
| | B1 | B2 | B3 | p |
| *E2A/PBX1* negative | 19 | 351 | 241 | Chi-square 0.0125 |
| *E2A/PBX1* positive | 0 | 3 | 11 | |

| Age cohort: 5-10 yrs | | | |
|---|---|---|---|
| | B1 | B2 | B3 | p |
| *E2A/PBX1* negative | 10 | 167 | 108 | Chi-square 0.0184 |
| *E2A/PBX1* positive | 0 | 3 | 10 | |

| Age cohort: 10-14 yrs | | | |
|---|---|---|---|
| | B1 | B2 | B3 | p |
| *E2A/PBX1* negative | 11 | 39 | 46 | Fisher test 0.476 |
| *E2A/PBX1* positive | 0 | 2 | 6 | |

| Age cohort: 14-18 yrs | | | |
|---|---|---|---|
| | B1 | B2 | B3 | p |
| *E2A/PBX1* negative | 11 | 32 | 20 | Fisher test 0.2896 |
| *E2APBX1* positive | 0 | 1 | 3 | |

| Age cohort: 18-25 yrs | | | |
|---|---|---|---|
| | B1 | B2 | B3 | p |
| *E2A/PBX1* negative | 23 | 41 | 26 | Fisher test 0.0119 |
| *E2A/PBX1* positive | 0 | 0 | 4 | |

| Age cohort: 25-30 yrs | | | |
|---|---|---|---|
| | B1 | B2 | B3 | p |
| *E2A/PBX1* negative | 10 | 19 | 8 | not applicable |
| *E2APBX1* positive | 0 | 0 | 0 | |

| Age cohort: 30-40 yrs | | | |
|---|---|---|---|
| | B1 | B2 | B3 | p |
| *E2A/PBX1* negative | 25 | 47 | 28 | Fisher test 0.4456 |
| *E2A/PBX1* positive | 0 | 1 | 2 | |

| Age cohort: 40-50 yrs | | | |
|---|---|---|---|
| | B1 | B2 | B3 | p |
| *E2A/PBX1* negative | 34 | 41 | 37 | Fisher test 0.6384 |
| *E2APBX1* positive | 0 | 1 | 2 | |

| Age cohort: 50-60 yrs | | | |
|---|---|---|---|
| | B1 | B2 | B3 | p |
| *E2A/PBX1* negative | 18 | 47 | 38 | Fisher test 1 |
| *E2APBX1* positive | 0 | 1 | 1 | |

**Supplementary Table 8**. Association between *MLL/AF4* rearrangement and the degree of B-cell differentiation.

| Whole cohort | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *MLL/AF4* negative | 188 | 2242 | 910 | Chi-square <.0001 |
| *MLL/AF4* positive | 68 | 3 | 5 | |

| Age cohort: 1-5 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *MLL/AF4* negative | 47 | 1110 | 432 | Fisher test 3.21E-07 |
| *MLL/AF4* positive | 5 | 1 | 2 | |

| Age cohort: 5-10 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *MLL/AF4* negative | 25 | 565 | 206 | Fisher test 3.05E-07 |
| *MLL/AF4* positive | 5 | 1 | 0 | |

| Age cohort: 10-14 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *MLL/AF4* negative | 21 | 218 | 91 | Fisher test 2.04E-07 |
| *MLL/AF4* positive | 7 | 1 | 1 | |

| Age cohort: 14-18 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *MLL/AF4* negative | 17 | 131 | 35 | Fisher test 1.42E-05 |
| *MLL/AF4* positive | 5 | 0 | 0 | |

| Age cohort: 18-25 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *MLL/AF4* negative | 27 | 49 | 30 | Fisher Test 0.0387 |
| *MLL/AF4* positive | 3 | 0 | 0 | |

| Age cohort: 25-30 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *MLL/AF4* negative | 5 | 24 | 8 | Fisher test 0.0006269 |
| *MLL/AF4* positive | 5 | 0 | 1 | |

| Age cohort: 30-40 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *MLL/AF4* negative | 20 | 50 | 29 | Fisher test 1.42E-06 |
| *MLL/AF4* positive | 11 | 0 | 1 | |

| Age cohort: 40-50 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *MLL/AF4* negative | 14 | 44 | 39 | Chi-square <.0001 |
| *MLL/AF4* positive | 20 | 0 | 0 | |

| Age cohort: 50-60 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *MLL/AF4* negative | 12 | 51 | 40 | Fisher test 1.58E-06 |
| *MLL/AF4* positive | 7 | 0 | 0 | |

**Supplementary Table 9**. Association between BCR/*ABL* rearrangement and the degree of B-cell differentiation.

| Whole cohort | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *BCR/ABL* negative | 259 | 2105 | 832 | Chi-square 0.0017 |
| *BCR/ABL* positive | 8 | 148 | 82 | |

| Age cohort: 1-5 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *BCR/ABL* negative | 51 | 1088 | 425 | Chi-square 0.9805 |
| *BCR/ABL* positive | 1 | 19 | 8 | |

| Age cohort: 5-10 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *BCR/ABL* negative | 30 | 554 | 200 | Chi-square 0.5384 |
| *BCR/ABL* positive | 0 | 16 | 4 | |

| Age cohort: 10-14 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *BCR/ABL* negative | 29 | 208 | 87 | Fisher test 0.5746 |
| *BCR/ABL* positive | 0 | 12 | 5 | |

| Age cohort:14-18 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *BCR/ABL* negative | 23 | 124 | 34 | Fisher test 0.653 |
| *BCR/ABL* positive | 0 | 8 | 1 | |

| Age cohort: 18-25 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *BCR/ABL* negative | 30 | 41 | 26 | Fisher test 0.3316 |
| *BCR/ABL* positive | 2 | 9 | 4 | |

| Age cohort: 25-30 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *BCR/ABL* negative | 11 | 20 | 7 | Fisher test 0.2599 |
| *BCR/ABL* positive | 0 | 5 | 2 | |

| Age cohort: 30-40 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *BCR/ABL* negative | 34 | 30 | 16 | Chi-square <.0001 |
| *BCR/ABL* positive | 0 | 22 | 14 | |

| Age cohort: 40-50 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *BCR/ABL* negative | 34 | 23 | 23 | Chi-square <.0001 |
| *BCR/ABL* positive | 2 | 23 | 17 | |

| Age cohort: 50-60 yrs | | | | |
|---|---|---|---|---|
| | B1 | B2 | B3 | p |
| *BCR/ABL* negative | 17 | 17 | 14 | Chi-square 0.0001 |
| *BCR/ABL* positive | 3 | 34 | 27 | |

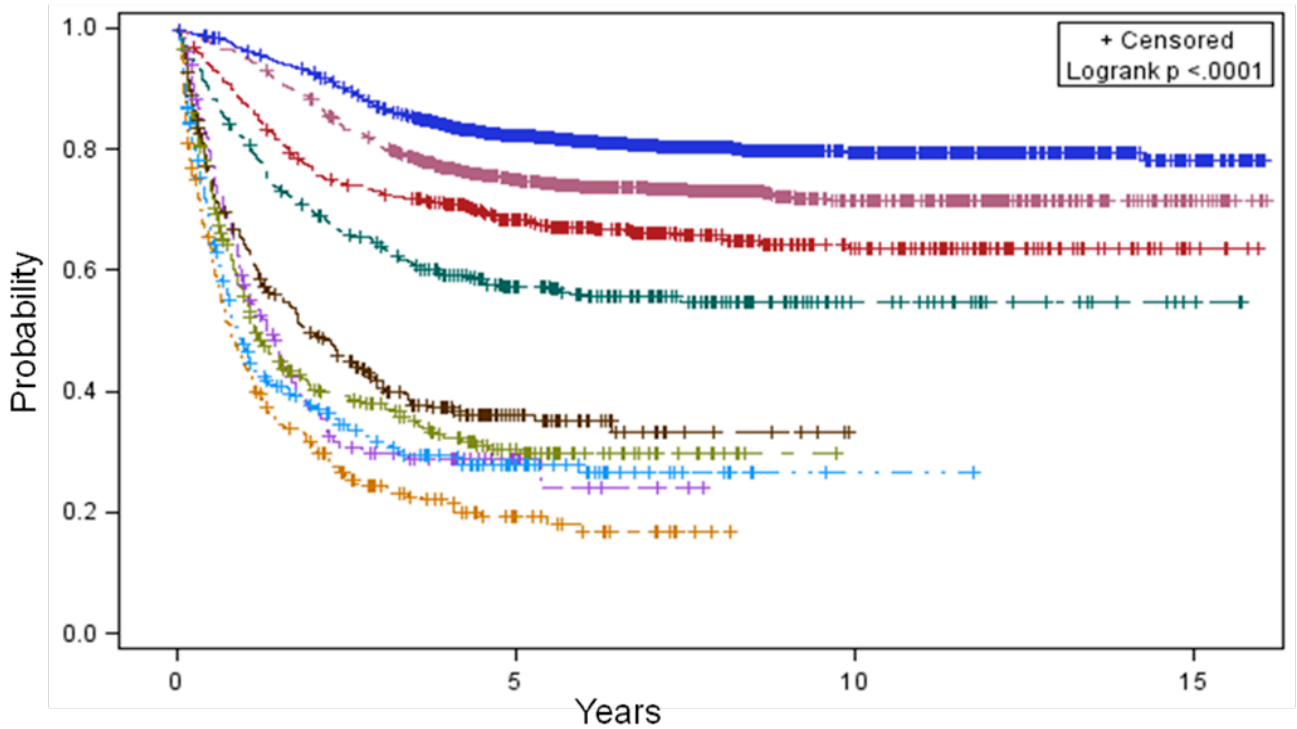**Legends to Supplementary Figures**

**Supplementary Figure 1.** EFS in the whole population analyzed, stratified according to the age groups.

**Supplementary Figure 2.** Differentiation stages of B-ALL in the different age cohorts analyzed (pro-B ALL: black bars; common ALL: light grey bar; pre-B ALL: dark grey bar). A significant increase in the percentage of pro-B up to the 5$^{th}$ decade of life is observed (p<0.0001).

**Supplementary Figure 3.** Differentiation stages of T-ALL in the different age cohorts analyzed, (pro-T & pre-T ALL: black bars; cortical T-ALL: light grey bar; mature T-ALL: dark grey bar). A significant increase of T1 ALL is recorded in the 5$^{th}$ and 6$^{th}$ decade (p=0.0018).

**Supplementary Figure 4.** Hematologic parameters in the different age cohorts. **A.** White blood count (black line), platelet count (light grey) and hemoglobin levels (dark grey) among different age cohorts. **B.** Percentage of hyperleukocytosis (cut-point >50 x 10$^9$/L) in the different age cohorts analyzed, stratified for lineage derivation (B-ALL: grey bars; T-ALL: black bars). A higher percentage of hyperleukocytosis is evident in T-lineage ALL. **C.** Distribution of Plt count <100 x 10$^9$/L in the different age cohorts analyzed, stratified for lineage derivation (B-ALL: grey bars; T-ALL: black bars). A significantly higher percentage of cases with Plt count <100 x 10$^9$/L is observed in B-ALL. **D.** Distribution of percentage of Hgb levels <10g/dL in the different age cohorts analyzed, stratified for lineage derivation (B-ALL: grey bars; T-ALL: black bars). A significantly higher percentage of cases with Hgb levels <10g/dL is observed in B-ALL.
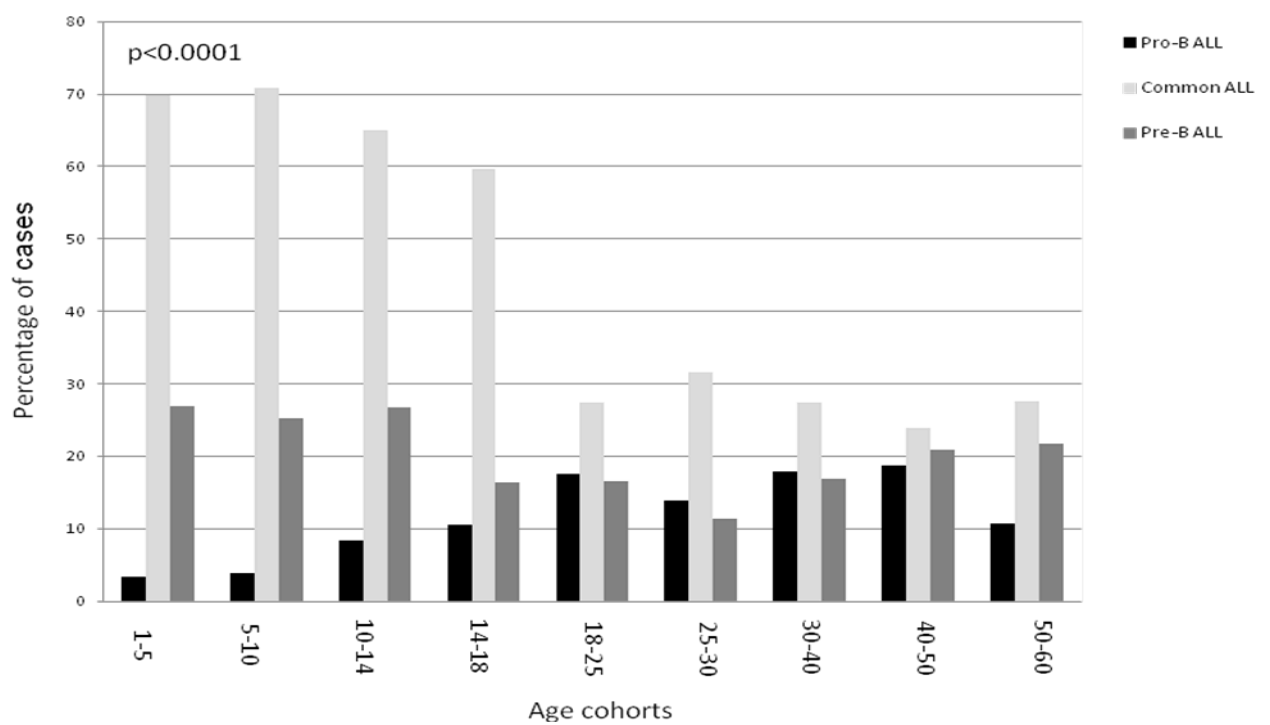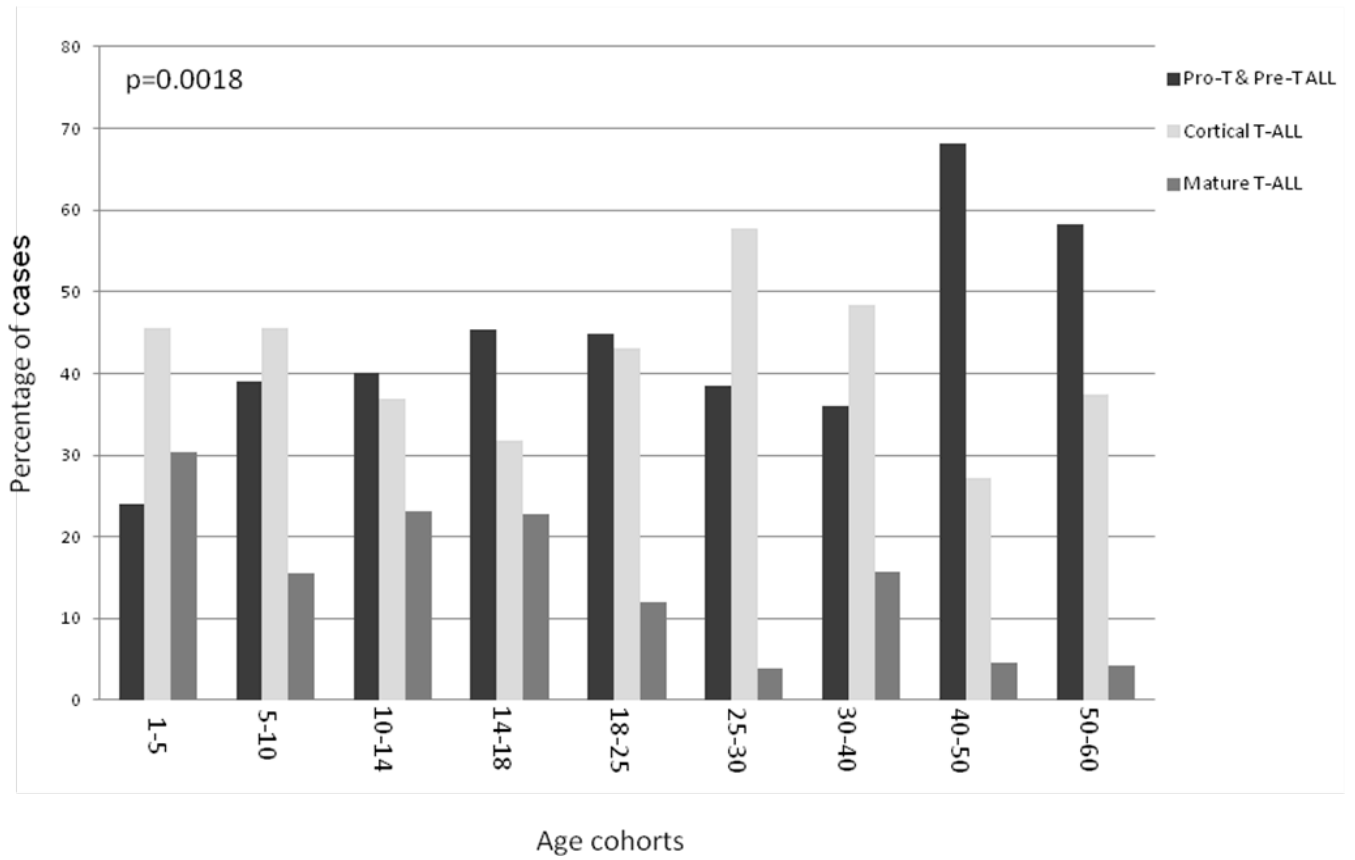
**Supplementary Figure 1**
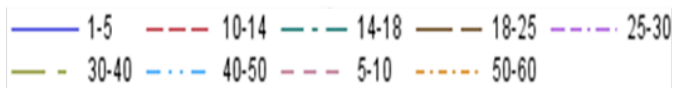


**Supplementary Figure 2.**

**Supplementary Figure 3.**



**Supplementary Figure 4.**