

# Initial results from the ALLTogether1 DS trial replacing standard chemotherapy with blinatumomab in children and young adults with Down Syndrome ALL



## KEY TAKEAWAYS

- Replacing standard chemotherapy with blinatumomab in the ALLTogether1 DS trial showed **impressive activity** with >90% patients having undetectable MRD
- Although there was an improved overall toxicity profile compared with historical chemotherapy consolidation, there was a high rate of seizure in patients aged >10 years

Blinatumomab is a CD3-/CD19-directed bispecific T-cell engager and has shown promising results in patients with B-ALL. In the ALLTogether1 DS trial, replacing standard consolidation therapy with blinatumomab resulted in **excellent measurable residual disease (MRD) negativity** in children and young adults with Down Syndrome ALL (DS-ALL).

## Standard of care with consolidation chemotherapy

Induction ..... Consolidation 1 ..... Consolidation 2 ..... Delayed Intesification ..... Maintenance

## Experimental therapy in the ALLTogether1 DS trial

Induction ..... **Blinatumomab 1** ..... **Blinatumomab 2** ..... Delayed Intesification ..... Maintenance

The primary endpoint was the proportion of MRD undetectable patients at the end of Cycle 1 with blinatumomab. Secondary objectives included safety and leukemia-specific outcomes such as incidence of relapse. Outcomes were compared to standard consolidation chemotherapy in a historical cohort of DS patients from the UKALL 2011 study.



## Primary endpoint met

**91%** of patients (31/33) achieved MRD negative status at the end of blinatumomab consolidation Cycle 1

## Lower rates of adverse events with blinatumomab compared with historical chemotherapy control (UKALL 2011 study)

Grade 3/4 AEs	<b>39.4%</b> Blinatumomab	<b>77.3%</b> UKALL study
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## Seizures more frequent with blinatumomab compared with historical chemotherapy control (UKALL 2011 study)

Seizures	<b>18.2%</b> Blinatumomab	<b>4.5%</b> UKALL study
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## Seizures significantly higher in children aged ≥10 years despite preventive treatment

Seizures	<b>56.6%</b> Blinatumomab - Patients aged ≥10 years	<b>4.2%</b> Blinatumomab - Patients aged ≤10 years
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## Average follow-up: 15 months

No deaths, secondary cancers, or relapse



## WHAT DOES THIS MEAN FOR PATIENTS?

Children with DS-ALL face significant challenges due to disease resistance and higher treatment-related mortality, highlighting the need for innovative treatments. The ALLTogether1 DS trial explored the use of blinatumomab, a CD3-/CD19-directed bispecific T-cell engager, as a replacement for standard consolidation chemotherapy.

The ALLTogether1 DS trial demonstrated an impressive 91% MRD negativity rate after Cycle 1 and reported fewer adverse events compared with standard chemotherapy from the UKALL 2011 study. However, increased seizures were observed in children older than 10 years, prompting the investigation of earlier and higher doses of levetiracetam as a preventive measure. Notably, there has been no treatment-related mortality or relapse events since the start of blinatumomab treatment. While these initial results are promising, further research with a larger patient group and extended follow-up is necessary to confirm if these results translate into improved long-term benefits and increased overall survival.

