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Antibody Immunotherapy treatment for adults with B - Acute Lymphoblastic Leukaemia –A Real-World Analysis

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INTRODUCTION

Blinatumomab (Blina) is recommended for routine use in the NHS for patients with:

- B−precursor acute lymphoblastic leukaemia (ALL)
- Philadelphia-chromosome-negative (Ph-neg)
- CD19−positive
- Minimal Residual Disease (MRD) of at least 0.1%
- In first complete remission (CR1)

OR in relapsed/refractory (R/R) Ph-neg ALL

Inotuzumab ozogamicin (Ino) is recommended as an option for treating R/R CD22-positive B-cell precursor ALL irrespective of Ph status

We sought to investigate the safety and efficacy of these immunotherapy agents in the real world setting.

METHOD

- A real world study
- Involving patients with B-ALL who received Blina or Ino at St Bartholomew's hospital between 1 Jan 2014 and 31 Dec 2019
- Data extracted from medical notes
- Patients followed from immunotherapy initiation until death or the end of the study period (1 Jan 2020), whichever occurred first
- 17 cases were eligible for the study, 2 were excluded as the relevant medical notes were not available providing a final study population of 15

RESULTS

Indication for immunotherapy

13/15 received immunotherapy for the indication of R/R disease

2/15 were treated for MRD +ve disease

Adverse cytogenetics

Documented in 40% of cases; 67% Ph-pos, 33% MLL rearrangement

Primary therapy

13/15 received UKALL 14 (85%) or UKALL 60+ (15%). 11/13 R/R patients had prior allogeneic hematopoietic stem cell transplant (HSCT)

Immunotherapy given

7/15 received Blina and 7/15 received Ino

1 patient received Blina and Ino sequentially (Table 1)

Table 1. Immunotherapy delivered

	N (15)
Blina	7
Ino	7
Blina then Ino	1

RESULTS

Age at relapse

Median 47.5 years; (range 36, 76)

WCC at relapse

Mean WCC 9.45 x 10^9/L (Range; 0.7, 23.9)

Duration of first remission

Median 23.5 months (Range; 3, 63)

Immunotherapy as salvage treatment

In 13/15 patients the immunotherapy was given as first line salvage treatment. The median number of prior salvage therapies was 1 (Range; 1,2)

Outcomes

Remission rates for those with R/R disease after cycle 1 of immunotherapy were 2/6 and 4/8 with Blina and Ino, respectively

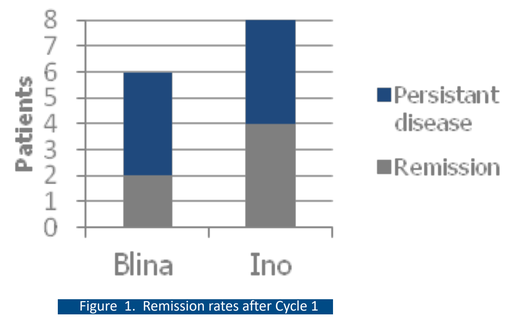

Figure 1. Remission rates after Cycle 1

Complications of therapy

Blinatumomab

In the R/R patients Cytokine Release Syndrome (CRS) was observed in 3/6 of patients receiving Blina

2/3 of these were Grade 3-4; necessitating Tocilizumab

1 patient who experienced CRS ceased Blina during cycle 1 due to grade 4 liver injury

1/6 treated with blina developed grade 4 neurotoxicity 4 days after commencement of cycle 1, necessitating cessation of therapy

Inotuzumab

No events of veno-occlusive disease in the ino treated patients to date inclusive of the single case proceeding to allo-sct

No early terminations of therapy in Ino treated patients

CONCLUSIONS

This study follows the outcomes of immunotherapy used primarily as first salvage therapy after CR1 in relapsed B-ALL

A significant proportion of patients achieve morphological remission after 1 cycle

This substantiates the efficacy of these therapies as previously reported [1,2]

Real world toxicity also appears comparable

Larger cohorts are needed to fully address the safety and efficacy of these agents in unselected patient cohorts

REFERENCES

1. N Eng J Med. 2016 Aug 25;375(8):740-53.
2. N Eng J Med. 2017 Mar 2;376(9):836-847. doi: 10.1056/NEJMoa1609783.

CONTACT INFORMATION

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