Impact of High Disease Burden on Survival in Pediatric B-ALL Patients Treated with Tisagenlecleucel

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Background and Abstract
• Rapid and progressive cancer of lymphocytes in the bone marrow
• Most prevalent pediatric cancer
• 5-year survival rate: 90%
• Yet, of treated patients:
  • 2% are refractory to induction chemo
  • 15% will relapse
• Tisagenlecleucel, known commercially as Kymriah and produced by Novartis, is an anti-CD19 autologous CAR-T cell therapy used in refractory or second or later relapse B-cell ALL for patients under 25
• Initial clinical studies have shown promising results, leading to FDA approval
Yet, Kymriah has not been the end all be all, with patients continuing to relapse post-infusion

Methodology
• Retrospective real-world experience analysis
• 31 pediatric, adolescent, young adult B-cell ALL patients
• Multicenter:
  • Johns Hopkins Hospital & St. Jude Children’s Cancer Research Center
• Patients infused between March 2018 – October 2021
• Data collection methods:
  • Clinical databases
  • Retrospective medical record review

Results

Interpretation & Conclusions
• Findings
  • Outcomes similar to clinical studies
  • CD19- relapses occurred earlier than CD19+ relapses
  • Pre-infusion disease burden predicted survival
• Future directions
  • Continued real world outcome evaluation
  • Studies analyzing predictive factors of outcomes
  • Studies exploring the effectiveness of post-infusion treatment strategies

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