CARing for ALL: A multicenter real worldstudy of ALL patients treated with CAR T-cell therapy using the TriNetX database

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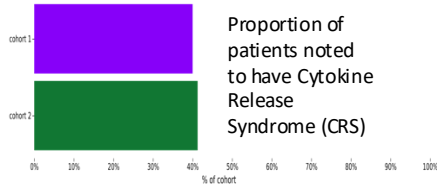
Introduction

- T cells genetically engineered with Chimeric Antigen Receptor (CAR) treatment for the ALL represent the new era of strategy.
- We aimed to identify the incidence of adverse events, describe outcomes and analyze demographic, healthcare resource utilization (HCRU) and clinical characteristics of patients receiving CAR T-cell therapies for ALL that puts them at greater risk for adverse events of the therapy, using an electronic medical record (EMR) network.

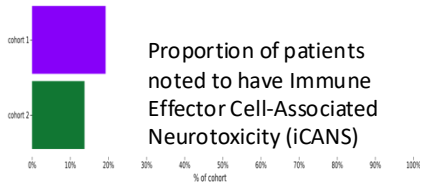
Method

- We conducted a retrospective study for adult and pediatric ALL patients using the TriNetX database network The data extraction included primary and secondary end points, PROMs, PRO parameters & clinical trial duration.
- Included patients had a diagnosis of ALL on or before the index event of CAR T-cell initiation therapy (either Tisagenlecleucel OR Brexucabtagene autoleucel). 1:1 Propensity score matching was used to decrease the impact of confounding factors on the study results. Demographic, HCRU, clinical characteristics were analyzed and incidence of adverse events including CRS, iCANS, mortality, 30-day & 90-day hospital readmissions and those being administered treatment of complications (ie. Tocilizumab) were captured.

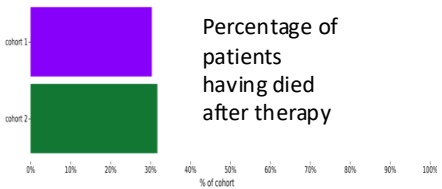
Results



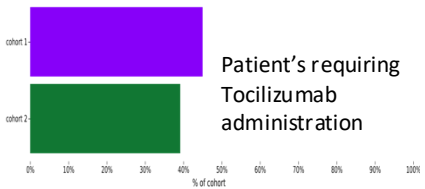
Proportion of patients noted to have Cytokine Release Syndrome (CRS)



Proportion of patients noted to have Immune Effector Cell-Associated Neurotoxicity (iCANS)

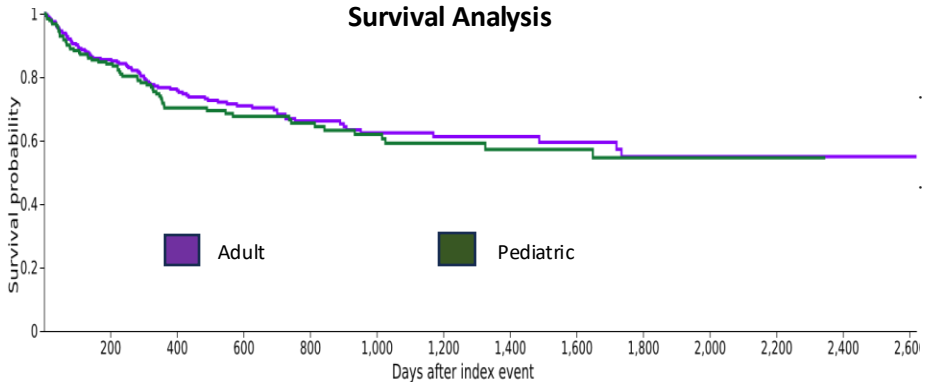


Percentage of patients having died after therapy



Patient's requiring Tocilizumab administration

Survival Analysis



Conclusion

- Patients being administered CAR T-cell therapy for ALL experience a number of adverse effects, with 2/5 patients having CRS and iCANs being seen in almost 1 out of every 5 adult patients.
- The mortality amongst the adult and pediatric groups were noted to be similar at about 30%, whereas historically, outcomes for adult ALL patients has been much worse as compared with their pediatric counterparts.
- Adult patients have a higher prevalence of comorbidities, researching the association between CAR T-cell therapies with these morbidities & mortalities would be beneficial in helping us understand the newer management avenues available to us.

References

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