Key Clinical Trials and Real World Outcomes		
ELIANA registration trial[1]	Maude SL, Laetsch TW, Buechner J, et al. Tisagenlecleucel in Children and Young Adults with B-Cell Lymphoblastic Leukemia. *N Engl J Med*. 2018;378(5):439-448. doi:10.1056/NEJMoa1709866	https://pubmed.ncbi.nlm.nih.gov/29385370/
Humanized CAR T-cell therapy[2]	Myers RM, Li Y, Barz Leahy A, et al. Humanized CD19-Targeted Chimeric Antigen Receptor (CAR) T Cells in CAR-Naive and CAR-Exposed Children and Young Adults With Relapsed or Refractory Acute Lymphoblastic Leukemia. *J Clin Oncol*. 2021;39(27):3044-3055. doi:10.1200/JCO.20.03458	https://pubmed.ncbi.nlm.nih.gov/34156874/
Phase 2 ZUMA-3 trial[3,4]	Shah BD, Ghobadi A, Oluwole OO, et al. KTE-X19 for relapsed or refractory adult B-cell acute lymphoblastic leukaemia: phase 2 results of the single-arm, open-label, multicentre ZUMA-3 study. *The Lancet*. 2021;398(10299):491-502. doi:10.1016/S0140-6736(21)01222-8 Bouchkouj N, Lin X, Wang X, et al. FDA Approval Summary: Brexucabtagene Autoleucel for Treatment of Adults With Relapsed or Refractory B-Cell Precursor Acute Lymphoblastic Leukemia. *The Oncologist*. 2022;27(10):892-899. doi:10.1093/oncolo/oyac163	https://pubmed.ncbi.nlm.nih.gov/34097852/ https://pubmed.ncbi.nlm.nih.gov/30309857/
Phase 1 ZUMA-4 trial[5]	Wayne AS, Huynh V, Hijiya N, et al. Three-year results from phase 1 of ZUMA-4: KTE-X19 in pediatric relapsed/refractory acute lymphoblastic leukemia. *Haematologica*. Published online October 20, 2022. doi:10.3324/haematol.2022.280678	Three-year results from phase 1 of ZUMA-4: KTE-X19 in pediatric relapsed/refractory acute lymphoblastic leukemia - PubMed (nih.gov)
CD19-directed CAR T with defined CD4+, CD8+ T-cell composition[6,7]	Gardner RA, Finney O, Annesley C, et al. Intent-to-treat leukemia remission by CD19 CAR T cells of defined formulation and dose in children and young adults. *Blood*. 2017;129(25):3322-3331. doi:10.1182/blood-2017-02-769208 Shah NN, Highfill SL, Shalabi H, et al. CD4/CD8 T-Cell Selection Affects Chimeric Antigen Receptor (CAR) T-Cell Potency and Toxicity: Updated Results From a Phase I Anti-CD22 CAR T-Cell Trial. *J Clin Oncol*. 2020;38(17):1938-1950. doi:10.1200/JCO.19.03279	https://ashpublications.org/blood/article/129/25/3322/107614/Intent-to-treat-leukemia-remission-by-CD19-CAR-T https://pubmed.ncbi.nlm.nih.gov/32286905/
CIBMTR: Real-world outcomes[8]	Pasquini MC, Hu ZH, Curran K, et al. Real-world evidence of tisagenlecleucel for pediatric acute lymphoblastic leukemia and non-Hodgkin lymphoma. *Blood Adv*. 2020;4(21):5414-5424. doi:10.1182/bloodadvances.2020003092	https://pubmed.ncbi.nlm.nih.gov/33147337/

CD19/22 CAR T-cells in CAYA with B-ALL[9]	Shalabi H, Qin H, Su A, et al. CD19/22 CAR T cells in children and young adults with B-ALL: phase 1 results and development of a novel bicistronic CAR. *Blood*. 2022;140(5):451-463. doi:10.1182/blood.2022015795	CD19/22 CAR T cells in children and young adults with B-ALL: phase 1 results and development of a novel bicistronic CAR - PubMed (nih.gov)
CD22 CAR T-cells in CAYA with B-ALL[7,10]	Shah NN, Highfill SL, Shalabi H, et al. CD4/CD8 T-Cell Selection Affects Chimeric Antigen Receptor (CAR) T-Cell Potency and Toxicity: Updated Results From a Phase I Anti-CD22 CAR T-Cell Trial. *J Clin Oncol*. 2020;38(17):1938-1950. doi:10.1200/JCO.19.03279 Fry TJ, Shah NN, Orentas RJ, et al. CD22-targeted CAR T cells induce remission in B-ALL that is naive or resistant to CD19-targeted CAR immunotherapy. *Nat Med*. 2018;24(1):20-28. doi:10.1038/nm.4441	https://pubmed.ncbi.nlm.nih.gov/29155426/ https://pubmed.ncbi.nlm.nih.gov/32286905/
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Dose Impact[11]	Stefanski H, Eaton A, Baggott C, et al. Higher doses of tisagenlecleucel associate with improved outcomes: a report from the pediatric real-world CAR consortium. *Blood Adv*. Published online August 8, 2022:bloodadvances.2022007246. doi:10.1182/bloodadvances.2022007246	https://pubmed.ncbi.nlm.nih.gov/35938863/
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Disease Burden[14–16]	Schultz LM, Baggott C, Prabhu S, et al. Disease Burden Affects Outcomes in Pediatric and Young Adult B-Cell Lymphoblastic Leukemia After Commercial Tisagenlecleucel: A Pediatric Real-World Chimeric Antigen Receptor Consortium Report. *J Clin Oncol*. Published online December 9, 2021:JCO.20.03585. doi:10.1200/JCO.20.03585 Myers RM, Taraseviciute A, Steinberg SM, et al. Blinatumomab Nonresponse and High-Disease Burden Are Associated With Inferior Outcomes After CD19-CAR for B-ALL. *J Clin Oncol*. 2022;40(9):932-944. doi:10.1200/JCO.21.01405 Ravich JW, Huang S, Zhou Y, et al. Impact of High Disease Burden on Survival in Pediatric Patients with B-ALL Treated with Tisagenlecleucel. *Transplant Cell Ther*. 2022;28(2):73.e1-73.e9. doi:10.1016/j.jtct.2021.11.019	https://pubmed.ncbi.nlm.nih.gov/34882493/

Blinatumomab Non-response[15]	Myers RM, Taraseviciute A, Steinberg SM, et al. Blinatumomab Nonresponse and High-Disease Burden Are Associated With Inferior Outcomes After CD19-CAR for B-ALL. *J Clin Oncol*. 2022;40(9):932-944. doi:10.1200/JCO.21.01405	https://pubmed.ncbi.nlm.nih.gov/34767461/
Cytogenetics[17]	Leahy AB, Devine KJ, Li Y, et al. Impact of high-risk cytogenetics on outcomes for children and young adults receiving CD19-directed CAR T-cell therapy. *Blood*. 2022;139(14):2173-2185. doi:10.1182/blood.2021012727	https://pubmed.ncbi.nlm.nih.gov/34871373/ https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7252549/
Infections and Immune Reconstitution[18,19]	Hill JA, Li D, Hay KA, et al. Infectious complications of CD19-targeted chimeric antigen receptor-modified T-cell immunotherapy. *Blood*. 2018;131(1):121-130. doi:10.1182/blood-2017-07-793760 Hill JA, Seo SK. How I prevent infections in patients receiving CD19-targeted chimeric antigen receptor T cells for B-cell malignancies. *Blood*. 2020;136(8):925-935. doi:10.1182/blood.2019004000	https://pubmed.ncbi.nlm.nih.gov/29038338/ https://pubmed.ncbi.nlm.nih.gov/32582924/
Relapse Prevention and Management following CAR T-cells		
Role of MRD as Post-CAR T-cell predictor of Relapse[20]	Pulsipher MA, Han X, Maude SL, et al. Next-Generation Sequencing of Minimal Residual Disease for Predicting Relapse after Tisagenlecleucel in Children and Young Adults with Acute Lymphoblastic Leukemia. *Blood Cancer Discov*. 2022;3(1):66-81. doi:10.1158/2643-3230.BCD-21-0095	https://pubmed.ncbi.nlm.nih.gov/35019853/
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Pre-infusion factors impact relapse immunophenotype[22]	Lamble A, Myers RM, Taraseviciute A, et al. Preinfusion factors impacting relapse immunophenotype following CD19 CAR T cells. *Blood Adv*. Published online April 28, 2022:bloodadvances.2022007423. doi:10.1182/bloodadvances.2022007423	https://pubmed.ncbi.nlm.nih.gov/35482927/
Antigen Escape[23]	Majzner RG, Ramakrishna S, Yeom KW, et al. GD2-CAR T cell therapy for H3K27M-mutated diffuse midline gliomas. *Nature*. 2022;603(7903):934-941. doi:10.1038/s41586-022-04489-4	https://pubmed.ncbi.nlm.nih.gov/30135176/

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Special Considerations for CAR T-cells in Unique Populations		
Extramedullary disease[31,32]	Fabrizio VA, Phillips CL, Lane A, et al. Tisagenlecleucel outcomes in relapsed/refractory extramedullary ALL: a Pediatric Real World CAR Consortium Report. *Blood Adv*.	https://pubmed.ncbi.nlm.nih

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Infant B-ALL[35,36]	Ghorashian S, Jacoby E, De Moerloose B, et al. Tisagenlecleucel therapy for relapsed or refractory B-cell acute lymphoblastic leukaemia in infants and children younger than 3 years of age at screening: an international, multicentre, retrospective cohort study. *Lancet Haematol*. 2022;9(10):e766-e775. doi:10.1016/S2352-3026(22)00225-3 Moskop A, Pommert L, Baggott C, et al. Real-world use of tisagenlecleucel in infant acute lymphoblastic leukemia. *Blood Adv*. 2022;6(14):4251-4255. doi:10.1182/bloodadvances.2021006393	https://pubmed.ncbi.nlm.nih.gov/35580324/ https://pubmed.ncbi.nlm.nih.gov/36084658/
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CAR T-cells: Biologic Correlatives Guiding Future Research		
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CAR T-cells for Diffuse Midline Gliomas[23]	Majzner RG, Ramakrishna S, Yeom KW, et al. GD2-CAR T cell therapy for H3K27M-mutated diffuse midline gliomas. *Nature*. 2022;603(7903):934-941. doi:10.1038/s41586-022-04489-4	https://pubmed.ncbi.nlm.nih.gov/35130560/
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