CLINICAL OUTCOMES & PROGNOSTIC IMPACT OF EBV REACTIVATION FOLLOWING CAR-T CELL THERAPY: A SYSTEMATIC REVIEW

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Introduction

- EBV reactivation and EBV-associated diseases are emerging concerns after CAR-T therapy.
- Risk increased due to **lymphodepletion** and **immunosuppression**.
- Limited data on **incidence, clinical manifestations, and outcomes**.

Aim

- Evaluate **clinical outcomes** and **prognostic impact** of EBV reactivation in adult CAR-T recipients.

Objectives

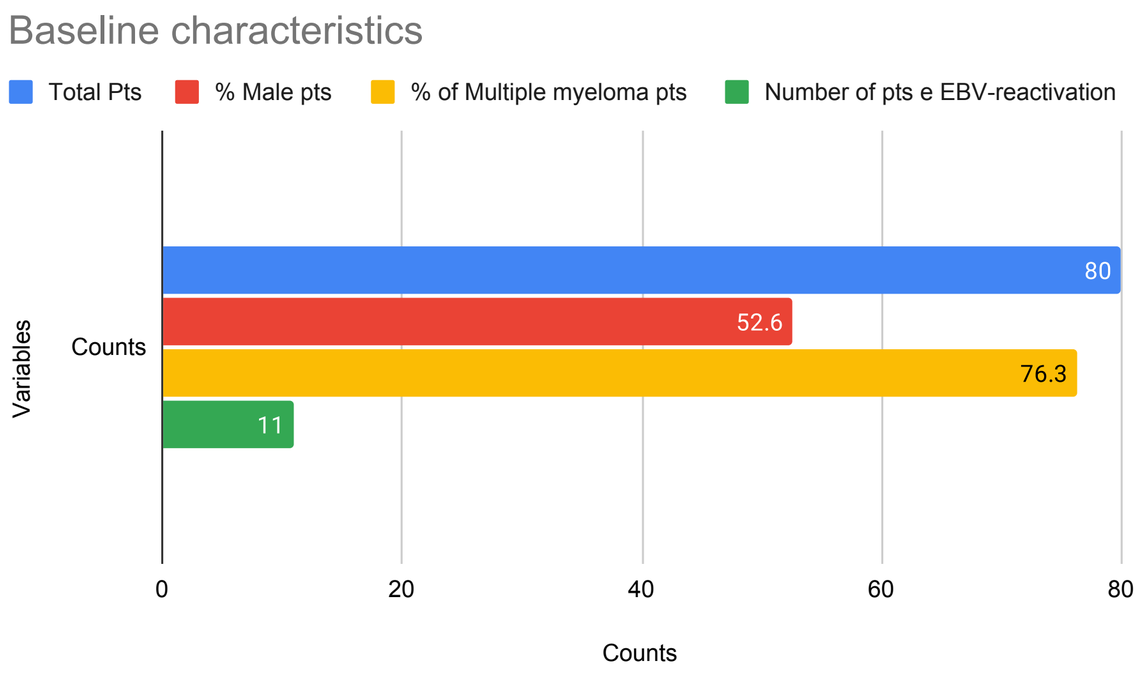
- Assess **incidence, clinical manifestations, treatment, and outcomes of EBV reactivation** post-CAR-T.

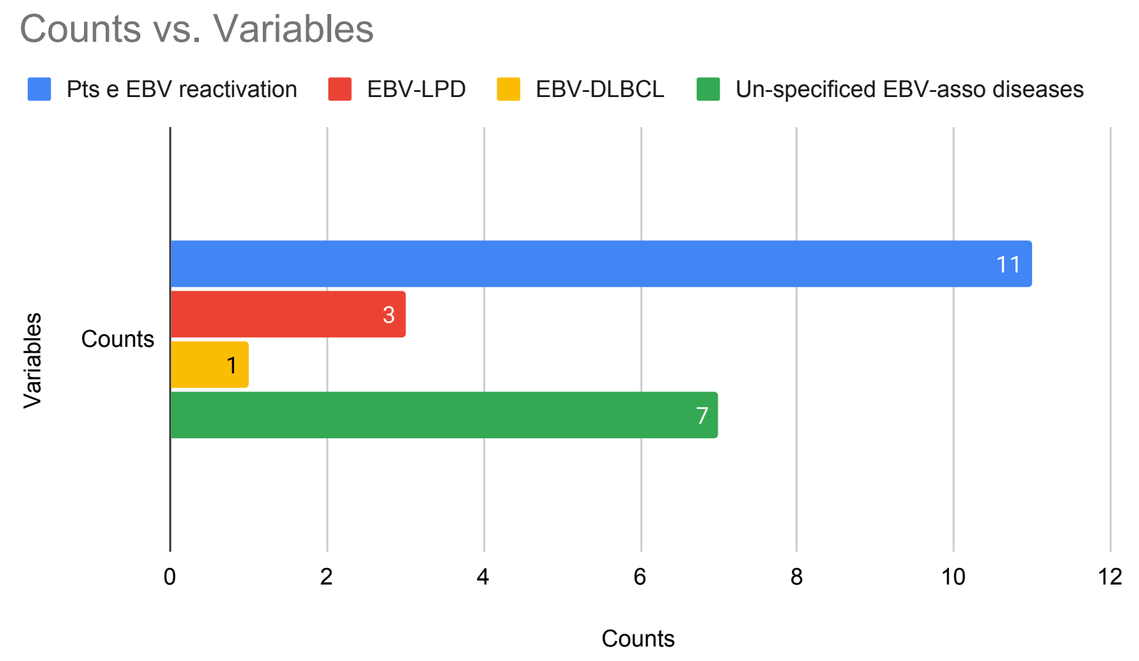
Methods

- Systematic review per **PRISMA 2020 guidelines**.
- Databases: **PubMed, Embase, Cochrane CENTRAL** (inception–March 2025).
- Records identified: **1,148** → Studies included: **5** (2 Phase I trials, 1 retrospective, 1 case series, 1 case report).
- **Descriptive statistics** for EBV reactivation, treatment, outcomes, adverse events.

Results

- **Patients:** 80 adults (median age **55**, range 23–70), **52.6% male**.
- **Disease: 76.3% multiple myeloma**;
- median 37 months from diagnosis to CAR-T (range 8–151).
- **EBV reactivation:** 11/80 (**13.5%**), median onset **8 months** post-CAR-T (range 1.8–44).
- **EBV-associated disease:** 4/11 (**36.4%**) → 3 EBV-LPD, 1 EBV-DLBCL.
- **Response:** 6/7 EBV-reactivated patients achieved **complete remission**.
- **Mortality:** 4/11 EBV-reactivated (**36.4%**) at median follow-up **10.5 months**.





Summary

- EBV reactivation post-CAR-T is **uncommon but serious**.
- Can cause **EBV-associated disease** and **high mortality**.
- Most EBV-reactivated patients still achieve **complete remission**.
- Highlights need for **post-CAR-T EBV surveillance** and **early intervention**.

Discussion

- Post-CAR-T EBV monitoring is **essential**, especially in high-risk patients.
- Further research needed for **predictors**, **risk stratification**, and **management strategies**.
- Findings support integrating EBV surveillance protocols into CAR-T care pathways

References

1.https://doi.org/10.1016/j.jtct.2024.07.018.(https://www.sciencedirect.com/science/article/pii/S2666636724005499)

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