

# Comparative Analysis of Patients' Characteristics, Treatment, and Survival Outcomes in CLL from China and the US

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## OBJECTIVES

• Our findings demonstrate significant differences in baseline characteristics, treatment patterns, and survival outcomes between Chinese and American patients with CLL. Notably, Chinese patients exhibited superior survival rates across multiple treatment modalities, including chemotherapy, immunotherapy, and targeted therapy. These observations highlight the potential impact of genetic, environmental, and healthcare-system factors on the management and prognosis of CLL.

## CONCLUSIONS

• This cross-sectional study underscores significant differences in clinical characteristics, treatment patterns, and outcomes of CLL between Eastern and Western populations. These observed disparities extend beyond demographic or socioeconomic influences, likely reflecting distinct antigenic profiles and underlying molecular genetic variations that shape the biological pathogenesis of CLL. Consequently, region-specific, tailored therapeutic strategies are essential to optimize patient outcomes in diverse CLL populations.

## INTRODUCTION

- Chronic Lymphocytic Leukemia (CLL) is the most common leukemia in older adults in the Western population, which has been well studied. The landscape of CLL in the Eastern population has rarely been described in large cohorts. Several differences have been reported between CLL in the Eastern and Western populations.
- The bases for these differences and implications for therapy outcomes are controversial and mostly unknown.

## METHODS

- We compared baseline co-variables, therapies and outcomes from two databases, Flatiron Health database in the United States (N=15,786) and Tianjin CAMS database from China (N=2,996).

## RESULTS

Chinese subjects had younger age at diagnosis, more advanced Rai stage and an increased prevalence of lymphadenoma, thrombocytopenia and increased  $\beta 2$ -microglobulin. Americans had higher rates of unmutated IGHV, TP53 deletion and cytogenetic abnormalities. These differences persisted after adjusting for age, Rai stage and IGHV mutation state. There were also substantial differences in therapy patterns between the cohorts. Median survival in Chinese was 9.7 versus 7.5 years in Americans ( $P < 0.001$ ). In sub-group analyses Chinese CLL had better 5-year survivals with chemotherapy (69% [95% CI, 66, 72%] versus 49% [47, 52%];  $P < 0.001$ ), immune therapies (67% [63, 72%] versus 65% [64, 66%];  $P = 0.041$ ) and targeted therapies (85% [81, 88%] versus 65% [64, 67%];  $P < 0.001$ ). These advantages were pronounced among older patients and those with early stage, mutated IGHV and without TP53 deletion.

Figure 1. Distributions of First-line Treatment Regimens in Tianjin CAMS and FH database.

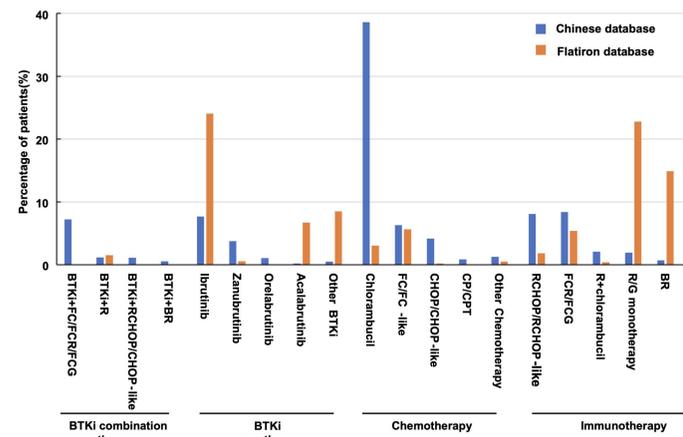


Figure 2. Distribution of Treatment Strategies by Year in (A) Tianjin CAMS and (B) FH database; and Distribution of First-line, Second-line, and Third-line Treatment from (C) Tianjin CAMS and (D) FH database.

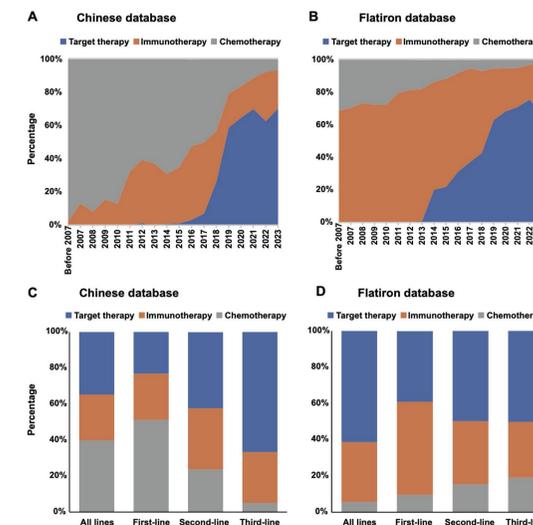


Figure 3. Survival Curve of Time to first treatment (TTFT) (A) and Overall Survival (OS) (B) in Patients with CLL from Flatiron and Tianjin CAMS Cohorts.

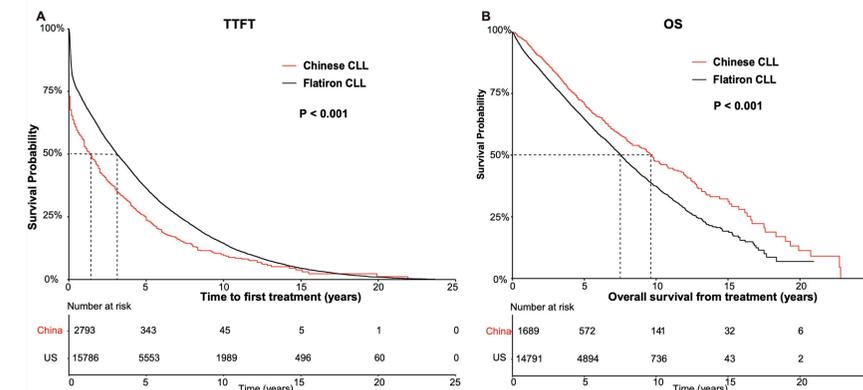


Figure 4. Overall Survival (OS) in Patients with CLL from Flatiron and Tianjin CAMS Cohorts (A) Overall, (B) by mutational Status, (C) by Age, (D) by Rai Stage and (E) by TP53 mutational Status.

