

TRENDS IN ACUTE LYMPHOBLASTIC LEUKEMIA INCIDENCE, MORTALITY, AND DISEASE BURDEN ACROSS LATIN AMERICAN SUBREGIONS, 1990–2023: A GLOBAL BURDEN OF DISEASE STUDY

Khalil MH¹, Sultana M¹, Saddique MN¹ and **Mandava S²**

1. King Edward Medical University, Lahore, Pakistan

2. NRI Medical College and Hospital, Mangalgiri, India



INTRODUCTION

- **Acute lymphoblastic leukaemia (ALL) is the most common pediatric malignancy** worldwide; major driver of hematologic cancer mortality in Latin America
- Disparities in care access, early diagnosis & treatment infrastructure across Tropical, Central & Southern LA
- Long-term subregional trends remain incompletely characterized



AIM

- Characterize sex- and subregion-specific **trends in ALL incidence, mortality & DALYs**
- Across Tropical, Central & Southern Latin America, 1990–2023



METHOD

- Age-standardized rates per 100,000 from **GBD 2023 database**
- **Tropical, Central & Southern Latin America, 1990–2023, overall & sex-stratified**
- Joinpoint regression used to estimate AAPC with 95% CIs



CONCLUSIONS

- **ALL burden** in Latin America is highly heterogeneous by subregion & sex
- **Central & Southern LA: sustained mortality & DALY reductions** over 3 decades
- **Tropical LA: rising incidence & worsening male mortality**
- **Targeted regional investment & sex-sensitive strategies** urgently needed, especially in **Tropical LA**

RESULTS

Incidence

- **Tropical LA:** ALL incidence **increased slightly** (AAPC **+0.50%**; 95% CI **0.44–0.55**; **P<0.001**), with a steeper increase in males (+0.61%) than females (+0.38%).
- **Central LA:** Incidence **remained stable** (AAPC **–0.07%**).
- **Southern LA:** Incidence showed a **modest decline** (AAPC **–0.26%**; 95% CI **–0.38 to –0.13**).

Mortality

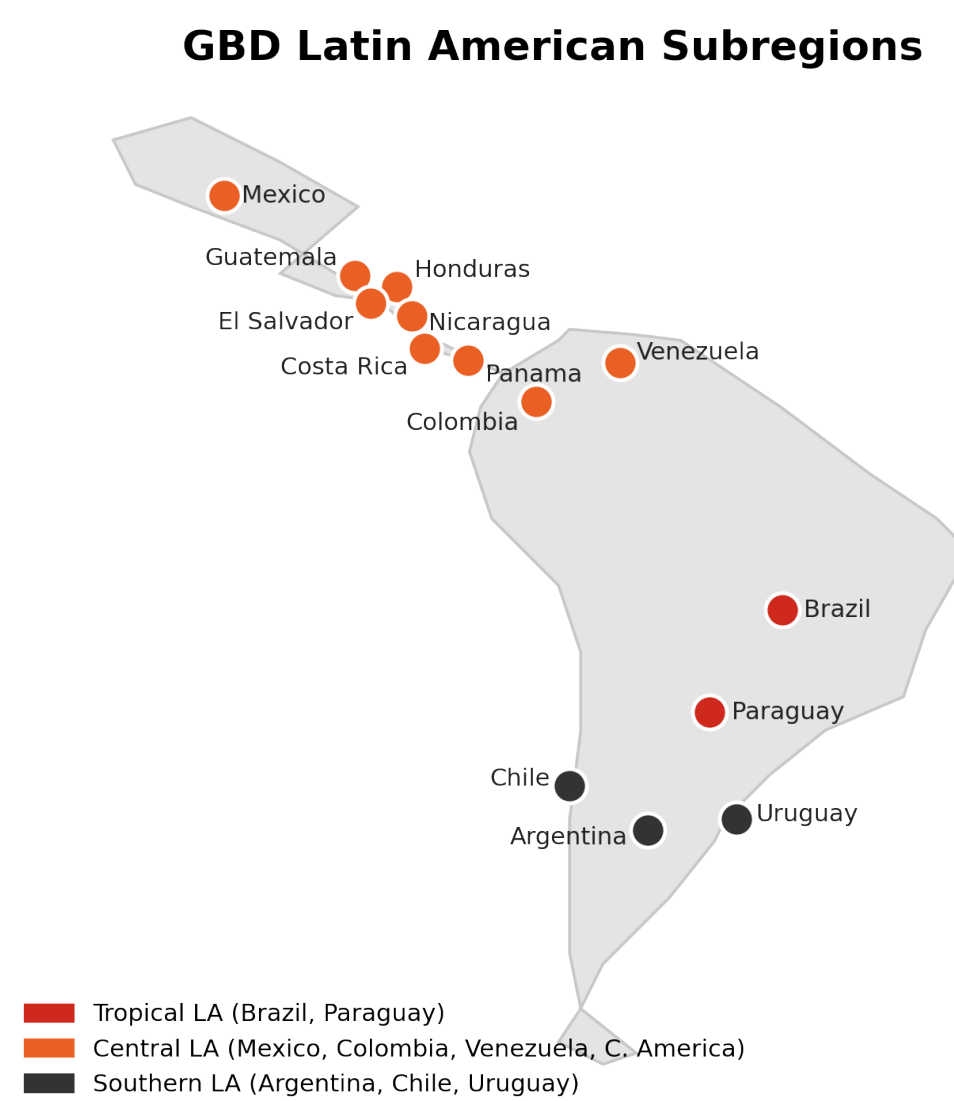
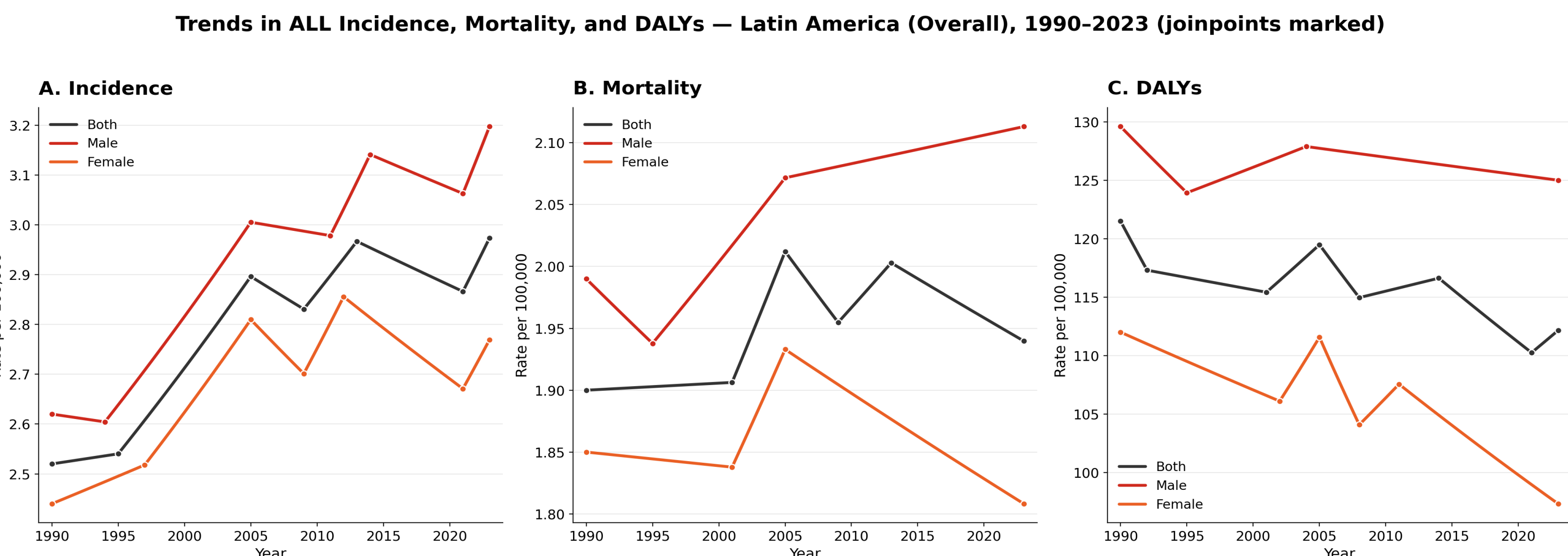
- **Tropical LA:** Mortality increased slightly but significantly (AAPC **+0.07%**), driven mainly by males (**+0.18%**), while mortality among females remained stable.
- **Central LA:** Mortality showed a **sustained decline** (AAPC **–0.80%**).
- **Southern LA:** Mortality also **declined steadily** (AAPC **–0.62%**), with a **greater decline among females** in both regions.

Disease burden (DALYs)

- **Central LA** showed the **greatest improvement in disease burden** (AAPC **–1.16%**), followed by Southern LA (**–0.85%**).
- **Tropical LA** showed the **least improvement** (**–0.24%**); the decline among males (**–0.11%**) was not statistically significant.

Key Findings

- Only Tropical Latin America shows rising ALL incidence and mortality — steepest in males
- Central Latin America shows the largest mortality (–0.80%) and DALY (–1.16%) declines of all three subregions
- Female mortality declines outpace male declines in every subregion
- Male DALY decline in Tropical Latin America (–0.11%) was not statistically significant



All rates are per 100,000 population. AAPC: average annual percent change; CI: confidence interval.

Fig. Fitted joinpoint trend lines, Latin America overall (Tropical + Central + Southern combined), 1990–2023, by sex. Subregion-specific AAPC comparison at left.

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CONTACT INFORMATION

Dr. Snigdha Mandava, MBBS

NRI Medical College and Hospital, Mangalgiri, India

saisnigdha718@gmail.com

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