



The Obesity-Leukemia Nexus: Global Burden of Acute Lymphoid Leukemia Attributable to High Body-Mass Index, 1990-2023 — A GBD 2023 Analysis

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INTRODUCTION

Acute lymphoid leukemia (ALL) is a hematologic malignancy associated with substantial premature mortality and disability worldwide. High body-mass index (BMI) is an increasingly prevalent metabolic risk factor and has been linked to adverse outcomes across multiple cancers. However, the global and regional burden of ALL attributable to high BMI and how this burden varies by age, sex, and sociodemographic development has not been comprehensively characterized. Understanding these patterns is important for identifying populations with rising risk and informing integrated obesity and cancer-prevention strategies.

AIM

To identify global inequities and emerging geographic hotspots in the burden of acute lymphoid leukemia attributable to high BMI from 1990 to 2023. We aimed to determine which regions, sociodemographic strata, age groups, and sexes have experienced the greatest increases in mortality and disability, thereby identifying populations that may benefit most from targeted obesity-prevention and leukemia-control strategies.

METHOD

We utilized global burden of disease 2023 tool to analyze ALL deaths and DALYs attributable to high BMI (1990–2023) absolute counts and age-standardized rates (ASR) per 100,000 stratified by SDI quintile, seven GBD super-regions, 21 sub-regions, sex, and two age bands (20–54 years; 55+ years). AAPC was estimated using log-linear regression.

CONCLUSIONS

High-BMI-attributable ALL mortality is rising globally in absolute terms, with alarming ASR acceleration in South Asia and Latin America, implicating obesity as a growing leukemia driver and demanding integrated cancer-obesity prevention in transitioning populations.

The Obesity-Leukemia Nexus: ALL Mortality Attributable to High BMI, 1990-2023

GBD 2023 Analysis | Risk: High BMI | Cause: Acute Lymphoid Leukemia | Both Sexes, All Ages

