Global Burden of Acute Myeloid Leukemia in the European Union and its Trend from 1990-2021: An Insight from the Global Burden of Disease study 2021

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Background

As one of the most common types of leukemia in adults, Acute Myeloid Leukemia (AML) poses a significant health burden across the European Union (EU), where variations in incidence, treatment efficacy, and patient outcomes reflect a complex interplay of genetic, environmental, and healthcare factors. This comprehensive study marks the first estimation of AML's global burden in the EU over three decades, including the first two years of the COVID-19 pandemic, which challenged the management of non-COVID-19 cases.

Methodology

Utilizing Global Burden of Disease methodologies, we analyzed AML's prevalence, incidence, mortality, and disability-adjusted life years (DALYs) stratified by age, sex, and location across 27 EU countries from 1990 to 2021. Both absolute counts and age-standardized rates (per 100,000) were assessed.

Results

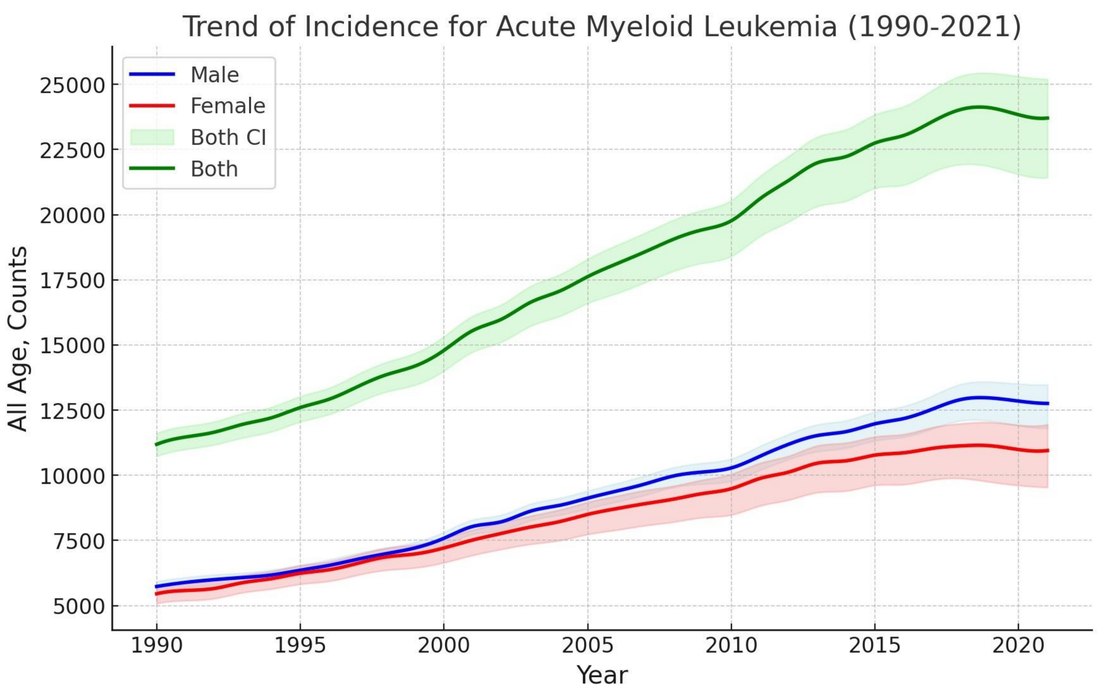
Prevalence increased from 22,111 (20,899 - 23,405) to 43,128 (39,093-46,529), Incidence rates rose from 11,185 (10,732-11,609) to 23,705 (21,423-25,203), Deaths escalated from 10,796 (10,348-11,230) to 21,665 (19,632-23,069).

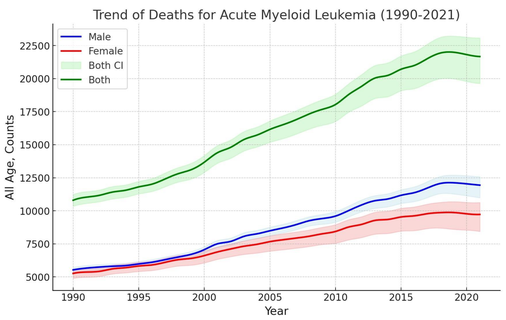
Highest age-standardized incidence rate (ASIR) Luxembourg at 3.64 (3.28-4.04), followed by Greece at 3.48 (3.23-3.73), Romania having the lowest at 1.2 (1.09-1.32). Greatest increases in ASIR in Bulgaria (75%; 35%-124%).

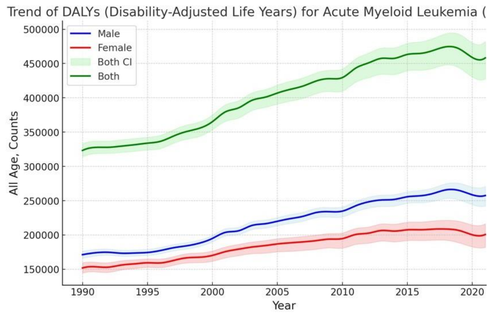
Highest mortality rate (ASMR) in 2021 was in Cyprus, at 3.35 (2.45-5.30). Greatest increases in ASMR in Lithuania (72%; 44%-103%)

Highest incidence occurred in the 80-84 age group with 3,855 cases (3,173-4,331), Most deaths in the 75- 79 age group with 3,669 (3,325-3,981). Most DALYs experienced in the 70-74 age group the at 69,483 (64,159-74,017).

In gender comparisons, males showed a higher increase in ASIR (31% vs. 24%) and ASMR (24% vs. 11%), while DALYs rates decreased (-2% vs. -11%).







Conclusion

Despite advances in management, AML remains a considerable burden, accounting for 1.68% of all cancer deaths in the EU in 2021. This study underscores the need for targeted preventive measures and robust healthcare policies to mitigate AML's impact and improve patient outcomes across the EU.