SWITCH AT ALL? LATE TKI SWITCHING VS. CONTINUOUS MONOTHERAPY: LONG-TERM OUTCOMES IN CHRONIC MYELOID LEUKEMIA (CML)

C. UGWU[1], N. UBAH[2], C. JONES[1], F. IBE[1], A. TANEJA[3]

1. Jefferson Einstein Hospital Philadelphia, PA;
2. Montefiore St Luke Cornwall, NY;
3. Sidney Kimmel Comprehensive Cancer Center, Jefferson Einstein, Philadelphia, PA

Introduction

Delayed tyrosine kinase inhibitor (TKI) switching in chronic myeloid leukemia (CML), often driven by emerging resistance, unavailability, or cumulative toxicity, may offer a more stable therapeutic window.

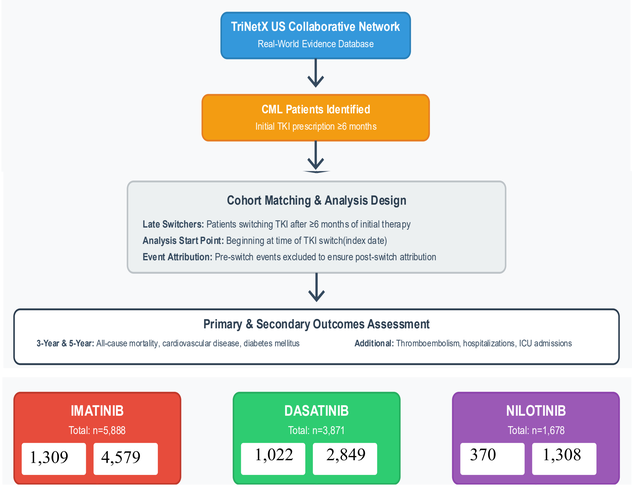
Aim

To determine whether late tyrosine kinase inhibitor (TKI) switching (≥6 months after initiation) yields different long-term outcomes than continuous monotherapy in chronic myeloid leukemia.

Objectives

Using matched cohorts from the TriNetX US Collaborative Network, compare 3- and 5-year all-cause mortality, cardiovascular events, diabetes, thromboembolism, hospitalizations, and ICU use—anchoring follow-up at the switch date to attribute events to post-switch exposure.

Methods

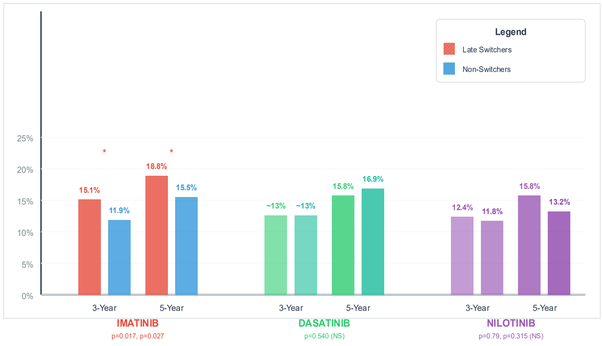


Results

- Late switchers from imatinib had higher mortality at 3 years (15.1% vs 11.9%, p=0.017) and 5 years (18.8% vs 15.5%, RR 1.22, 95% CI 1.02–1.45, p=0.027) plus more CAD (11.6% vs 8.8%, p=0.040) and heart failure (12.7% vs 9.6%, p=0.021).
- Late switchers from dasatinib showed no significant differences in 3- or 5-year mortality (15.8% vs 16.9%, p=0.540) or in cardiovascular events, ICU admissions, or hospitalizations.
- Late switchers from nilotinib had similar mortality at 3 years (12.4% vs 11.8%, p=0.79) and 5 years (15.8% vs 13.2%, p=0.315) but fewer hospitalizations at 3 years (13.7% vs 22.1%, RR 0.62, p=0.044).

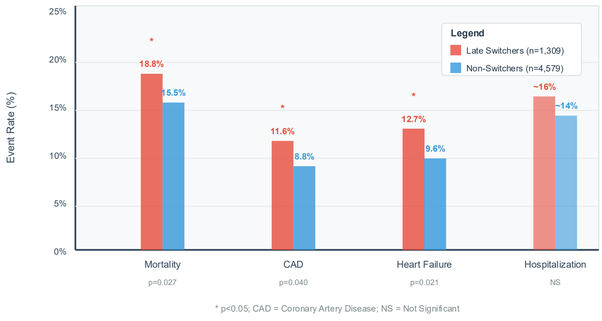
Results

All-Cause Mortality: Late Switchers vs. Non-Switchers
3-Year and 5-Year Survival Outcomes by TKI Type



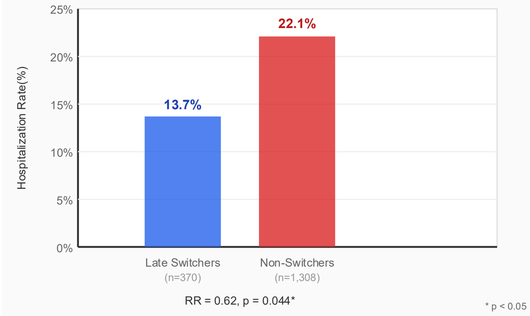
Key Finding: Only imatinib showed significantly increased mortality risk with late switching
* p<0.05 statistically significant; NS = Not Significant

Cardiovascular Outcomes: Imatinib Late Switchers vs. Non-Switchers
5-Year Follow-up Results



* p<0.05; CAD = Coronary Artery Disease; NS = Not Significant

Nilotinib: 3-Year Hospitalization Rates
Late Switchers vs Non-Switchers



RR = 0.62, p = 0.044*

* p < 0.05

Discussion

Late TKI switching (≥6 months) showed no overall survival benefit—worse among imatinib starters, neutral for dasatinib, and modest hospitalization advantages for nilotinib—implying effects depend on the initial TKI and may reflect biology/toxicity prompting the switch.

Clinically, earlier response-guided adjustments and more deliberate frontline selection are advisable, while interpreting results cautiously given confounding by indication, limited molecular response capture, and potential EHR misclassification in late-switch cohorts.

Summary

