Increased Healthcare Costs with Concomitant Acid-Reducing Agents and Tyrosine Kinase Inhibitors in Chronic Myeloid Leukemia: A US Payer Perspective

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Context

Tyrosine kinase inhibitors (TKIs) have transformed outcomes for chronic myeloid leukemia (CML) patients [1]. However, their bioavailability can be reduced when co-administered with acid-reducing-agents (ARAs) which occur in up to 1 in 2 patients. This may compromise efficacy and increase cost of care [3-6].

Objective

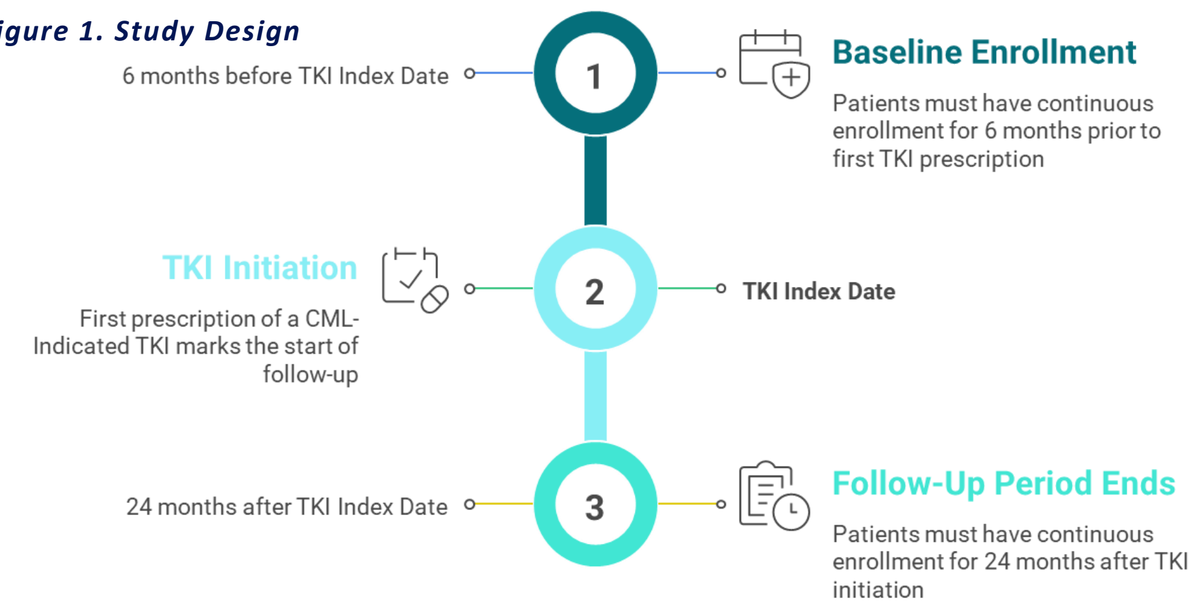
Assessment of potential impact on health resource utilization and cost over 24 months of concomitant use of TKIs with ARAs in adult patients with a CML code and 6 months of continuous enrolment (CE) before, and 24 months after the TKI first prescription date (TKI Index Date) from a US payer perspective.

Design, setting and participants

Between 2006 and 2023 the Merative claims database identified patients with a CML code and with continuous enrollment from 6 months data before to 24 months after starting a TKI (Figure 1).

The identified patient group was divided into 2 cohorts: TKI-Only and TKI-ARA. Hospitalization, readmission, and Emergency Room (ER) visit rates were analyzed and the total cost of care calculated for the two cohorts over a period of 24 months. Entropy balancing was used to adjust for confounding covariates, measured at baseline. The two cohorts were balanced for age at index, sex, insurance, region, initiation with 1st or 2nd generation TKI and Elixhauser Comorbidity Index (ECI) score.

Figure 1. Study Design



Results

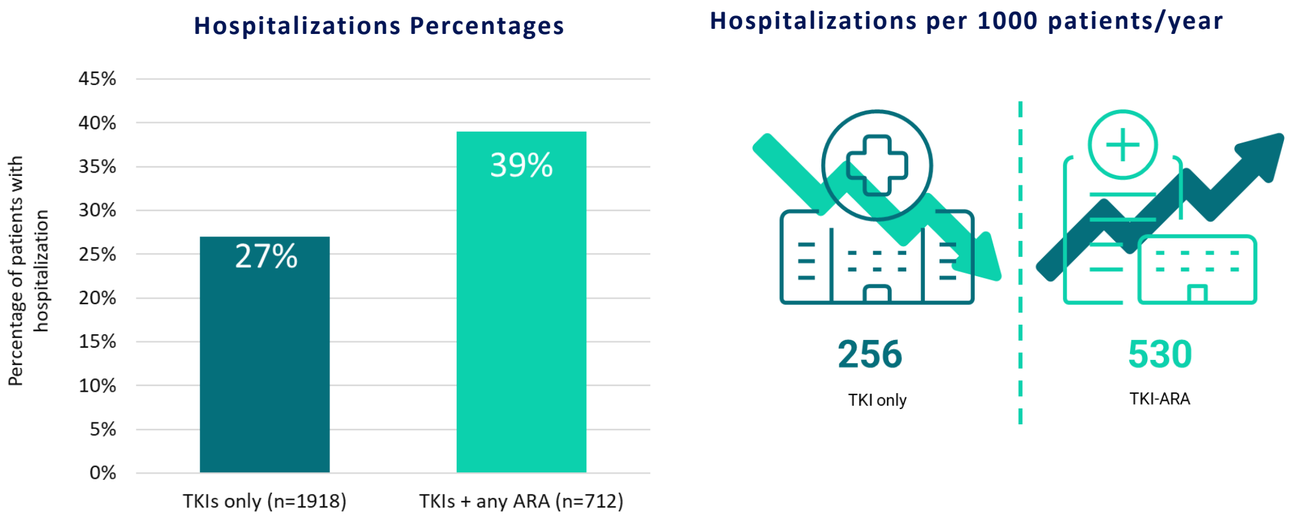
- 2,630 patients were identified, including 1,918 in TKI-Only (73%) and 712 in TKI-ARA (27%) cohorts (Figure 2)

Figure 2. Proportion of patient taking concomitant ARA's



- In the 24 months following the TKI Index date, 27% of patients in the TKI-Only cohort were hospitalized compared to 39% of patients in TKI-ARA cohort
- Hospitalizations per 1,000 cohort patients per year were 2.1 times higher for patients in the TKI-ARA cohort (256 vs 530) (Figure 3)

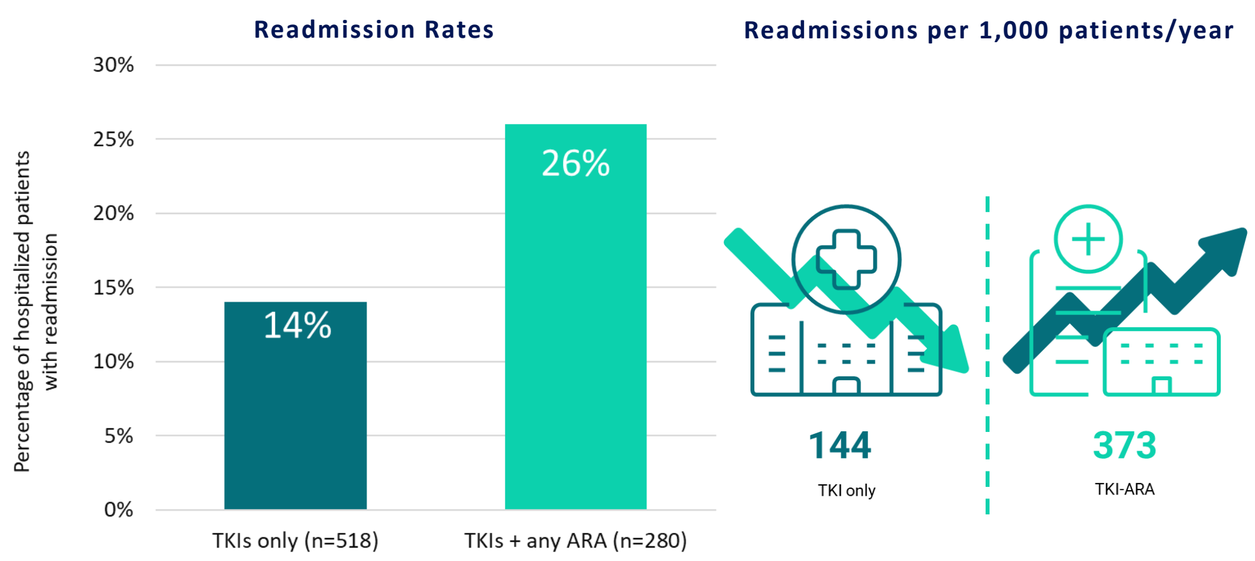
Figure 3. Hospital admission rates during the 24 months following TKI index date



- 48% of TKI-Only patients had an ER visit, compared to 59% of patients in the TKI-ARA cohort.
- ER visit days per 1,000 cohort patients per year were 1.6-fold higher for the TKI-ARA cohort at 749 vs 1,169 (Figure 4)
- Of patients who required hospitalization, 14% of TKI-Only patients required readmission within 30 days, compared to 26% of TKI-ARA patients, a 2.6-fold increase (Figure 5)

Figure 4. Emergency Room visit rates during the 24 months following TKI index date

Figure 5. Readmission rates during the 24 months following TKI index date



- The total mean cost per patient over the 24-month period was $246,872 for TKI-Only patients and $310,805 for TKI-ARA patients, an average cost per month of $10,286 vs $12,950 respectively (Figure 6)
- Per Patient Per Month (PPPM) cost of care in TKI-Only vs TKI-ARA was increased for hospitalization ($3,965 vs $6,331), outpatient drug ($7,799 vs $8,283) and outpatient procedure ($1,391 vs $2,176) (Figure 6)

Figure 6. Cost of Care PPPM during the 24 months following index date

Cost Type	TKI-Only	TKI-ARA
Total Mean Cost (24 months)	$246,872	$310,805
Average Cost (Monthly)	$10,286	$12,950
Hospitalization (PPPM)	$3,965	$6,331
Outpatient Drug (PPPM)	$7,799	$8,283
Outpatient Procedure (PPPM)	$1,391	$2,176

Conclusion

- Co-administration of TKI and ARA is common and has clinical consequences
- TKI and ARA-comedication was also associated with increased hospital admissions, readmissions within 30 days and increased frequency of ER visits
- It is also associated with increased total cost of care in CML-patients

References

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