Abstract: PB2589

Title: A 10 YEAR OVERALL SURVIVAL ANALYSIS OF CHRONIC MYELOID LEUKEMIA PATIENTS TREATED WITH TYROSINE KINASE INHIBITORS IN A MAJOR HAEMATOLOGY CENTRE IN MALAYSIA : A REAL WORLD ANALYSIS

Abstract Type: Publication Only

Topic: Chronic myeloid leukemia - Clinical

Background:

Chronic Myeloid Leukaemia (CML) management has been revolutionized by the advent of tyrosine kinase inhibitors (TKIs). Despite more than two decades since the introduction of TKIs in the Malaysian healthcare landscape, long term outcomes have not been rigorously studied. Various factors may impact prognosis and understanding these factors may influence patient management and improve long term outcomes.

Aims:

This study aims to estimate and compare the 10-year overall survival (OS) rates based on patient-related, clinical-related and medication-related factors among adults diagnosed with CML on TKI therapy at Ampang Hospital, Selangor, which is the National Reference Centre for Haematology in Malaysia.

Methods:

This retrospective cohort study reviewed the medical records of 389 CML patients aged 18 years and above who were initiated with TKIs – including imatinib mesylate, nilotinib, or dasatinib – between 2012 and 2021. The primary outcome of interest was survival time, measured in months from the initiation of TKI therapy to the occurrence of death from any cause. Kaplan-Meier product limit estimator and log-rank test with the incorporation of Bonferroni correction were utilized to compare overall survival rates across different factors.

Results:

There were 51 deaths (13.1%), resulting in an overall mortality rate of 2.10% (95% confidence interval [CI]: 2.06, 2.12) per 100 person-years. The majority of deaths (40.4%) occurred within the first 3 years of TKI initiation. The overall survival rates at six months, one year, three years, five years, and ten years were 98.5%, 97.7%, 94.5%, 90.5%, and 81.7%, respectively.

Several patient-related factors significantly affected overall survival rates, including age group ($p<0.001$), comorbidities measured by Charlson Comorbidity Index (CCI) score ($p<0.001$), phase of CML at diagnosis ($p<0.001$), and CML disease progression ($p<0.001$). Clinical-related factors such as baseline peripheral blast (%) ($p<0.001$) and prognosis scoring using the EUTOS long-term survival score (ELTS) ($p<0.001$) were also statistically significant.

Regarding medication-related factors, TKI adherence measured by medication possession ratio (MPR) ($p<0.001$), concurrent prescription of three or more medications with TKI ($p<0.001$), complete cytogenetic response (CCyR) at 6 months ($p=0.035$), major molecular response (MMR) at 12 months ($p=0.035$), MMR at 24 months ($p<0.001$), number of TKI switches ($p=0.007$), and history of follow-up defaults ($p=0.015$) were found to be statistically significant in the study.

Summary/Conclusion:

This retrospective cohort study in Malaysia demonstrates that TKI treatment for CML is well-tolerated, with a respectable real-world 10-year OS of 81.7% for the entire cohort. The study also highlights the significant influence of patient-related, medication-related, and clinical factors on long-term outcomes, emphasizing the necessity for tailored therapeutic approaches and diligent monitoring in managing CML patients.

Keywords: Survival, Tyrosine kinase inhibitor, Chronic myeloid leukemia