Title: Hematological, Clinical, Cytogenetic and Molecular Profiles of Confirmed Chronic Myeloid Leukemia Patients at Presentation at a Tertiary Care Teaching Hospital in Addis Ababa, Ethiopia: A Cross-Sectional Study

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Abstract:

Background: In low-income countries there is insufficient evidence on hematological, clinical, cytogenetic and molecular profiles among new CML patients. Therefore, we were eager to perform this study among newly confirmed CML patients at Tikur Anbesa Specialized Hospital (TASH), Ethiopia.

Objective: To determine the hematological, clinical, cytogenetic and molecular profiles of confirmed CML patients at tertiary care teaching hospital in Addis Ababa, Ethiopia

Methods: A facility-based cross-sectional study was conducted to evaluate hematological, clinical, cytogenetic and molecular profiles of confirmed CML patients at TASH from August 2021 to December 2022. A structured questionnaire was used to collect the patients' sociodemographic information, medical history and physical examination, and blood samples were also collected for hematological, cytogenetic and molecular tests. Descriptive statistics were used to analyze the sociodemographic, hematological, clinical, cytogenetic and molecular profiles of the study participants.

Results: A total of 251 confirmed new CML patients were recruited for the study. The majority of patients were male (151 [60.2%]; chronic (CP) CML, 213 [84.7%]; and had a median age of 36 years. The median (IQR) WBC, RBC, HGB and PLT counts were 217.7 (155.62-307.4) $x10^3/\mu L$, 3.2 (2.72-3.6) $x10^6/\mu L$, 9.3 (8.2-11) g/dl and 324 (211-499) x $10^3/\mu L$, respectively. All patients had leukocytosis, and 92.8%, 95.6% and 99.2% of the patients developed anemia, hyperleukocytosis and neutrophilia, respectively. Fatigue, abdominal pain, splenomegaly and weight loss were the common signs and symptoms observed among CML patients. Approximately 86.1% of the study participants were Philadelphia chromosome positive (Ph+) according to fluorescence in situ hybridization (FISH). P210, the major breakpoint protein, was detected by both qualitative polymerase chain reaction (PCR) and quantitative real time polymerase chain reaction (PCR).

Conclusion: During presentation, most CML patients presented with hyperleukocytosis, neutrophilia and anemia at TASH, Addis Ababa. Fatigue, abdominal pain, splenomegaly and weight loss were the most common signs and symptoms observed in the CML patients. Most CML patients were diagnosed by FISH, and p120 was detected in all CML patients diagnosed by PCR. The majority of CML patients arrive at referral center with advanced signs and symptoms, so better to decentralize the service to peripheral health facilities.

Biography:

Dr. Fekadu Urgessa, a PhD Candidate at Addis Ababa University, Addis Ababa, Ethiopia. With my expertise in area of hematology and genomics, I have tried to contribute in different hematological abnormalities and cancer cases. For example nowadays, we are conducting study a consortium study on different solid tumors with different African countries in collaboration with Duke University. Besides, related to the current title, we are also conducting other study with Prof Jerald Radich of Fred Hutchison Cancer Center, Seattle, WA, USA on miRNA as biomarker among leukemic patients. Currently I have published more than 15 papers on different area of interest with majority of them around hematological abnormalities. Generally, I'm interested to conduct study on different solid and others cancer types besides, hematological abnormalities.