Cancer Care Centre
Reduce your risk of cancer

Early Molecular Response in East African Ph+ CML Patients.
Do we need an African Prognosis Score?

Henke O, Mapendo JP, Mmbaga LG, Leak S, Mkwizu EW

Cancer Care Centre, Kilimanjaro Christian Medical Centre, Moshi, United Republic of Tanzania

Background

Philadelphia chromosome positive (Ph+) Chronic Myeloid Leukaemia (CML) is a haematologic malignancy and belongs to the group of myeloproliferative diseases. The annual incidence of CML in Europe ranges between 0.7 – 1.0/100,000 with a median age at diagnosis of 57-60 years [1]. Data from the US display an incidence rate of 1.6/100,000 and WHO suggests that no association with race or ethnicity seems to exist [2]. However, due to lack of reliable data, incidence rate for LIC remain an estimation [2], but taking the existing data for extrapolation, the worldwide annual incidence would be above 100,000. It is known that African patients are younger at time of diagnosis with an average of 39,5 years [3] and genetic varieties have been found by Koffi et al. [4]. Poor prognosis and adverse treatment outcome were related to additional chromosomal abnormalities and complex aberrations. Furthermore, the prognostic indices were not conclusive with treatment outcome. Studies on early molecular response under Imatinib treatment has not been published in East Africa yet. We present preliminary data from our study in Northern Tanzania.

Methods

All new diagnosed Ph+ CML patients were included and FBC, EUTOS Score and clinical investigations were performed. 3 months after Imatinib treatment, bcr-abl/abl ratio was obtained using real time PCR and clinical remission was documented.

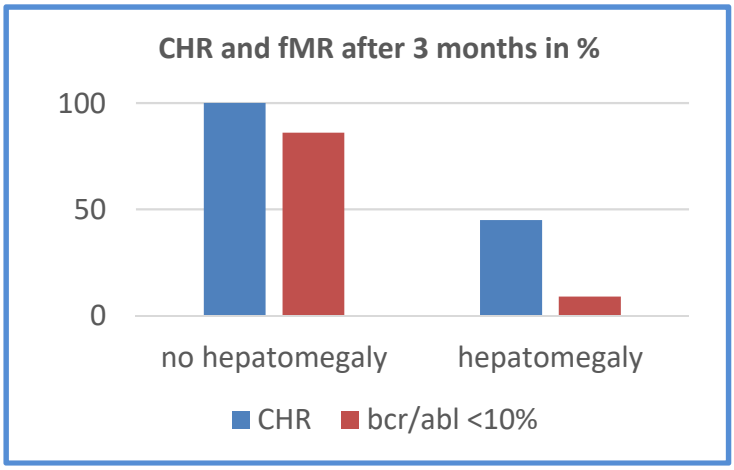
female-male ratio	1 : 2
average age	38 years
average WBC at time of Dx	311/nL
hepatomegaly at time of Dx	n=11 (61,1%)
CHR at 3 months	n=12 (66,6%)
bcr/abl ration <10% at 3 months	n=7 (38,9%)

Characteristic of patients, CHR = complete hematologic resonse, Dx = diagnosis

Contact
Dr. Oliver Henke, Cancer Care Centre, P.O. Box 3010, Moshi, Tanzania
oliver.henke@charite.de

Results

18 patients were evaluated for early MR and haematologic response. The age range were between 4 and 60 years (mean age 37.7), WBC at diagnosis between 78 and 499/nl (mean 311/nl), all patients had splenomegaly, 11 patients had hepatomegaly, 16 were in chronic phase and 1 in accelerated phase. 12 patients obtained complete hematologic response, favourable early molecular response (fMR) (bcr-ab-/abl <10%) in 7 patients. No correlation was found between EUTOS score or WBC count and fMR, but hepatomegaly was positively correlated with non-fMR (p=0.04911).



CHR = complete hematologic resonse, fMR = favourable early molecular response

Discussion

This is the first study investigating early MR in Ph+ CML patients in East Africa. Despite the small number of patients, a trend towards fewer early MR as described in different ethnic group was found. Furthermore, hepatomegaly seems to be strongly associated with non-fMR. The same finding was reported 2008 from the Ivory Coast [5] and it was suggested to develop an "African CML prognostic score" that includes hepatomegaly. The "IMA-Fail" Score from Serbia [6] takes hepatomegaly also into account. Our results support these findings for the East African population. More patient data are needed to confirm our findings and further genetic testing of those with non-favourable response are necessary to understand the low response rate.

References

1. Höglund M et al. Ann Hematol (2015) 94(Suppl 2): 241.
2. WHO., 2014. Chronic myelogenous leukamia. https://www.who.int/selection_medicines/committees/expert/20/applications/CML.pdf
3. Mendizabal AM et al. Int J Hematol 2016,103:70-78
4. Koffi KG et al. Advances in Hematology; 2010
5. Nanho DC et al. Mali Med. 2008;23(3):19-22.
6. Lekovic D et al. Hematology (2017), 22:8,460-466