Reviewer's report

Title: Clinical Symptoms and Chemotherapy Completion in Elderly Patients with Primarily Diagnosed Acute Leukemia: A Retrospective Comparison Study with a Younger Cohort

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Reviewer: Michael Heuser

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The study by Hu et al. compares clinical symptoms, chemotherapy adherence, and chemotherapy outcome in 183 elderly patients (60 years of age or older) with that of 183 younger patients (<60 years of age). Data were extracted from medical records of consecutive patients with a diagnosis of acute leukemia (myeloid or lymphoblastic) treated at a Fujian hospital. The authors found that elderly patients had more comorbidities at presentation, more often had AML than ALL, had a higher chemotherapy drop-out rate, lower remission rate in patients who completed chemotherapy, and had a higher rate of cardiotoxicity and lung infection. In the group of 92 elderly patients who discontinued chemotherapy the reasons for discontinuation were severe symptoms from leukemia in 42, economic difficulties in 37, and severe adverse effects of chemotherapy in 12 percent of patients. The authors conclude that strategies should be evaluated to improve the treatment adherence in elderly patients.

This manuscript is well written and organized and the statistical methods appear well performed. The overall findings of this study are not novel. However, this retrospective study from one medical center in Fujian gives a detailed overview about the management and outcome of elderly patients with acute leukemias outside of clinical trials and thus should be of interest to the scientific community.

Major Compulsory Revisions:

1. In the methods section the authors state that patients are included with the diagnostic criteria of acute leukemia. They should define these criteria, e.g. FAB or WHO criteria or EGIL criteria for lymphoblastic leukemia.

2. The authors use the term “proliferation of bone marrow”, but it is unclear what they mean. Proliferation is a time dependent characteristic. Do the authors mean bone marrow cellularity or blast percentage? Did they do immunohistochemistry to determine proliferation markers in blasts? This criterion should be better defined.

3. How is complete remission defined?

4. The authors use the term FAB classification to distinguish ALL from AML cases. FAB classification typically refers to the morphologic classification of AMLs. The authors should use “type of acute leukemia” instead to avoid confusion.
5. What was the lower age limit in younger patients? Are children included?

6. The authors should describe treatment schedules and chemotherapy agents for treatment of AML and ALL patients.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.