Reviewer's report

Title: Regional differences in performance of bone marrow transplantation, care-resource use and outcome for adult T-cell leukemia in Japan

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Reviewer: Alois Gratwohl

Reviewer's report:

The authors present an interesting and timely report on regional differences in health care usage for patients with adult T-cell leukemia. This clear report holds important information. Its strength is the focus on a well defined entity in one country with a relatively uniform health care system. The main conclusions about regional differences are likely to be true. Still there are some caveats.

- Major Compulsory Revisions

Information is essential about the general policy of hospital choice. Can patients choose their hospital; eg can they travel from one region to another to obtain their bone marrow transplant. If this is possible, numbers about such out of region treatments need to be known. Rich patients from poor regions could travel to richer regions with “better” hospitals. Since, in general, affluent patients are better educated, have a better general condition, their outcome is likely to be improved. It could falsify the results and the conclusions.

Information on health care settings in the different regions needs to be provided. This includes specifically: N total population, N hospitals, community and academic in absolute numbers and per N inhabitants; annual health care expenditures per capita; N T-cell leukemias in absolute numbers and per N inhabitants; N transplants for T-cell leukemia in absolute numbers and per N inhabitants.

As a comparison, information on BMT in general is needed for each region: N transplants in 2010 for all indications and transplant rates (N transplants per 10 million inhabitants) and on team density (N BMT teams in absolute numbers and per 10 million inhabitants). This information should be easily available from the Japanese society for hematopoietic stem cell transplantation.

The authors must clearly state that “in house mortality” is not an accepted endpoint for patients with allogeneic stem cell transplantation in general, for several reasons. Patients may have an initial early uneventful course, be discharged and then die after readmission, to the primary hospital or to another. Similarly, patients with very severe complications and minimal chances for recovery might be transferred to a hospital or a hospice close to home of the patient, or even at home for their final phase. They would not account for “in house mortality”. Day 100 mortality is generally accepted for comparisons but only if the major pretransplant risk factors for individual patients are known.
- Minor Essential Revisions

The quality of the manuscript would substantially win if the primary evaluation, prevalence of the disease, transplant rate and proportion of patients with transplant vs no transplant could be extended to a disease with homogeneous distribution in Japan, eg acute myeloid leukemia.

- Discretionary Revisions

there are several minor misspellings

**Level of interest:** An article of importance in its field

**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'