Reviewer's report

Title: Cytokine serum levels during post-transplant adverse events in 61 pediatric patients after hematopoietic stem cell transplantation: a retrospective analysis

Version: 1 Date: 8 May 2015

Reviewer: Sinisa Dovat

Reviewer's report:

In the submitted manuscript the authors analyzed the role of cytokines as potential markers for different complications of stem cell transplantation for pediatric patients. They have studied 61 pediatric patients who underwent hematopoietic stem cell transplant. The study identified several cytokines as putative indicators for specific complications including veno-occlusive disease (VOD), graft-versus-host disease (GVHD), and sepsis. The data are carefully analyzed and well presented. The study is novel, it addresses an important clinical problem and has the potential to advance clinical practice in children undergoing stem cell transplants. The role of cytokines in adverse effects of stem cell transplant is still unclear thus, the results of the study can have a strong impact on diagnostic and therapeutic approaches to complications of stem cell transplant. This manuscript can be of interest for the broad range of readers of BMC Cancer. However, before the manuscript can be considered for publication, several concerns have to be addressed.

Major Compulsory Revisions:

1) In order to better understand the association of elevated cytokines with a particular adverse event post transplant, it is essential to clarify whether there is a difference in cytokine levels due to a particular conditioning regimen and/or due to the type of transplant performed. Specifically, the levels of cytokines in patients who have received total body irradiation (TBI) as part of conditioning should be compared to the cytokine levels in patients who did not receive TBI (in a table).

2) Similarly, cytokine levels in patients who received stem cells from matched unrelated donors (MUD), should be compared to cytokine levels in other patients.

3) How many patients that were diagnosed with VOD had at the same time GVHD Grade III or IV?

4) How many patients diagnosed with VOD had at the same time documented sepsis?

5) How many patients diagnosed with VOD have documented VOD by liver biopsy?

6) In patients diagnosed with VOD, who did not undergo liver biopsy, how many
of them had elevated levels of PAI-1?

7) Discussion should be re-written and the emphasis should be placed on mechanistic rationale for the observed results, along with future research directions regarding the role of cytokines in adverse effects of stem cell transplants. The readers of BMC Cancer would benefit from a discussion that consists of more forward thinking regarding diagnostic and therapeutic options in pediatric patients with stem cell transplants.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**
I declare that I have no competing interests