Reviewer's report

Title: Population-based SEER trend analysis of overall and cancer-specific survival in 5,138 patients with gastrointestinal stromal tumor

Version: 2
Date: 26 March 2015
Reviewer: Jordi Rubió-Casadevall

Reviewer's report:

Major compulsory revisions
This study is an analysis of survival in GIST patients using SEER database in a time period that included years in which the definition of GIST was not clear and before the widespread use of imatinib as treatment of those patients.

I would like to think over some conceptual aspects:

1. In epidemiological studies I think is better to use “relative survival” instead of “cancer specific survival”, as it is difficult to assess the real cause of death without consulting the clinical report of each patient. Relative survival is observed survival adjusted for another causes of death in the population covered, please specify if it has been this the concept used.

2. I believe that the increase in survival in non-metastatic GIST is not real and the reason for the trend in survival in the years before imatinib is known (line 226). Before the consensus of 2001 (Fletcher et al. Human Pathol 2002; 33: 459-465) some tumors that are today considered low or very low GIST were diagnosed by pathologist as “leiomioma” or other related terms, not malignant. As considered not malignant, were registered in SEER and another Population-based Cancer Registries. When all tumors suspected to be GIST had been classified performing CD117 immunostaining, almost 25% had been missed by Registries (Rubió et al. Eur J Cancer 2007; 43: 144-148). The inclusion in statistics of these tumors after 2001 has falsely increased incidence and survival (Rubió et al. Clin Trasl Oncol 2014; 16: 660-667). This may be taken into account by authors and somehow included in discussion.

3. The misclassification of leiomyosarcomas as GIST (line 227) it is not an important bias as the 80% of sarcomas of gastrointestinal tract are GIST, but could be important to discuss that in the first epidemiological study of GIST incidence performed in SEER (Tran et al. Am J Gastroenterol 2005; 100(1): 162-168), CD117 immunostaining was not mandatory to classify this type of neoplasm and incidence was consequently lower than other studies.

With a large discussion about the limits and bias of this study, I think is a good epidemiological analysis and suitable to publish

Level of interest: An article of importance in its field
Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I don't have any competing interest