Reviewer’s report

Title: The Cost of Anal Cancer in England: Retrospective hospital data analysis and cohort model

Version: 1 Date: 19 March 2014

Reviewer: Charlotte Chamberlain

Reviewer’s report:

Concept: Original with a clearly defined question.

Major Compulsory Revisions
1. The manuscript may benefit from a more clearly described sensitivity analysis and additional sensitivity analyses. For instance, the rising cost of treatment for chemotherapeutics as has been seen with other cancer types with the introduction of biological agents, but the sensitivity analysis in the manuscript only compares no inflation and constant inflation- Both theses scenarios are likely underestimates.

2. An incorrect assumption has been made that the treatment for squamous and adenocarcinomas are the same ~20% of the included cases will be adenocarcinoma and therefore will proceed to resection- but there are no primary surgical costs in the costing analysis. This could be dealt with in a sensitivity analysis or as part of the model.

3. By not including pre-treatment colostomy or post-treatment surgical salvage procedures for squamous cancer there is a large omission. The authors do note that it makes their estimate conservative, however, when coupled with no mention of the primary surgical resections for adenocarcinomas at all, it seems more inaccurate that conservative...

Minor Essential Revisions
1. The data analysis is a case series (non-comparative) study design; however, this is never mentioned in the manuscript.

2. The assumption that adverse events of treatment are detected by HES activity data where anal cancer is the first or second diagnosis code is optimistic... Neutropenic Sepsis or Radiation Proctitis may not have anal cancer coded in the first or second diagnosis codes and therefore this should be noted in the limitations.

3. Missing HES fields data were poorly commented on.

4. The limitations section does not comment on the inherent bias of using a case series.

5. There was no baseline of cost of untreated anal cancer and there were no opportunity costs of other proposed treatment options (eg vaccine). A comment...
on these would be helpful.

6. There is no attempt to consider ancillary costs of caring at home (stoma nurses/district nurses for dressings post radiotherapy etc). Since these data are not available then it should be noted in the limitations section that there are additional potential ‘health service’ costs not included in the model.

Discretionary Revisions

1. I would suggest that the authors make clear that Sanofi Pasteur MSD develop and market the quadrivalent HPV vaccine used in the UK.

2. There was no incremental analysis, but the reminder of the analysis provides sufficient detail for this to be considered.

3. There is no discounting, which would be interesting to consider for the population suffering from anal cancer.

4. There is uncertain merit in extrapolating figures from 9 months of data up to one year. At the very least a sensitivity analysis without the extrapolation should be presented to test the assumptions made that the trends would remain the same over the remaining three months. The alternative would be to present only the existing data.

5. It was a strength to consider local disease separately, however, there may be merit in considering age or region separately as well.

6. Since high-cost cancer drugs aren’t included in the costing (not included under PbR) should something be interpolated for this?

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