Reviewer’s report

**Title:** Screening of Y chromosome microdeletions in 46,XY partial gonadal dysgenesis and in patients with a 45,X/46,XY karyotype or its variants

**Version:** 2 **Date:** 17 August 2013

**Reviewer:** Liborio Stuppia

**Reviewer’s report:**

The manuscript of Dos Santos et al. reports a study aimed to investigate the presence of Y chromosome microdeletions in individuals with partial and mixed gonadal dysgenesis showing variable phenotypes. Some criticisms should be addressed by the authors before the manuscript is acceptable for publication.

**Major Compulsory revisions**

The main limit of this work is the rationale. While several reports have already suggested that Yq microdeletions can induce an instability of the Y chromosome and thus an increase in the risk of sex chromosome mosaicism, there is no rationale to suggest that this kind of structural alteration could predispose to partial gonadal dysgenesis (PGD) with 46,XY karyotype. In fact, genes mapped within Yq do no play any role in sex determination, being their function related to male gametogenesis. I would suggest authors to give another rationale to the study, that is to point on the prevalence of Yq microdeletion in mixed gonadal dysgenesis and to use PGD patients as controls.

**Minor revisions**

1) Since molecular results of patients 11 and 14 are not available, these patients should be excluded by the study.

2) The majority of deletions found by the authors involve AZFb locus, while usually the most involved locus in infertile patients is AZFc alone. Authors should comment this point: are microdeletions with break point in AZFb more dangerous in increasing the risk of mosaicism?

3) In most cases with Yq micro deletion, patients were actually carriers of a citogenetically detectable structural aberration of the Y chromosome. In these cases the only usefulness of testing Y-STS is to identify breakpoints. Authors should discuss this point.

4) Although the description of the genes disrupted in each microdeletion is of interest, it should be stressed that in no way the effect of the microdeletion on Y chromosome instability is mediated by the loss of function of genes whose function is related to spermatogenesis.

**Level of interest:** An article of limited interest
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.