Reviewer’s report

Title: Do partial AZFc deletions affect the sperm retrieval rate in non-mosaic Klinefelter patients undergoing microdissection testicular sperm extraction?

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Reviewer: Marjan Sabbaghian

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The manuscript submitted by I-shen et al., entitled "Do partial AZFc deletions affect the sperm retrieval rate in non-mosaic Klinefelter patients undergoing microdissection testicular sperm extraction?" and summarizes the authors findings of any deleterious effects of partial AZFc region deletions on sperm retrieval rate in 66 non-mosaic 47, XXY patients with and without successful sperm retrieval.

Finding predictive factors that help improving the sperm retrieval rate in KS patients is an interesting topic for sure; however there are a number of issues for consideration.

1- Page number is missing.

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2- The manuscript would strongly benefit from being read by one of the native English authors

3- "…Y chromosome deletion is associated with deleterious effects" on/including what?

4- The authors noted that the rate of partial AZFc deletion is 20.8% and 9.5% in those with successful and unsuccessful sperm recovery, respectively. Does the difference was not significant?!

5- The references of 14-15 are published 10-12 years before; so, they should not be considered recent literature.

6- In p.6 L.46 the authors state "…after treatment...". what kind of treatment the authors mean? Are they denoting to medical therapy with aromatase inhibitors, clomiphene or human chorionic gonadotropin before microdissection testicular sperm extraction?

7- In p.6 paragraph 3 the authors imply that 2 factors of testosterone and age are reliable prognostic factors, but the only recommendation is about age. Needs to add a sentence about the role of testosterone, as well.
8- What was the inclusion criteria for fertile group?

9- It is noted that "107 fertile controls who had fathered at least one child were obtained". However, considering a time-limit after fathering is a must, as age can affect male infertility, adversely.

10- The discussion needs to be reduced in size. The first paragraph of Discussion doesn't any relevance to the main purpose of the article. Some sentences may be transferred to the Introduction section.

11- In p.13 L.16 it is state that "10% of KS can present with an additional X chromosome"; it should be change to higher-grade of X chromosome aneuploidies.

12- In p.14 L.7 the authors referred to references of 16-17 and discuss that "In men younger than 35 years old, sperm retrieval rate (SRR) is reported to range from 55% to 86%"; however, the issue is there is no 55% in these references:

According to Ref. 16- Ramasamy, R., et al., "SRR for micro-dissection TESE was 71% at ages 22 to 30 years, 86% at 31 to 35 years and 50% at 36 to 52 years" and based on Ref. 17- Okada, H., et al., "The success rates in TESE were 81% (25 to 29 years); 73% (30 to 34 years).

13- The fifth paragraph of discussion needs to be transferred to introduction.

14- In p.14 L.53 the authors discuss that "Gr/gr deletion, the clinically most relevant and common form of AZFc deletion, has gained attention worldwide". It is also not entirely clear that deletion is clinically most relevant to what? Do authors mean the correlation with male infertility? But in p.6 of the manuscript they indicated that "... the frequency of gr/gr deletion is only higher in certain azoospermia or oligozoospermia populations in Italy and China..."

15- In p.15 L.53 it is stated that "(18). AZFc partial duplication other than partial deletion increase the risk of spermatogenic failure"; it is unclear to what they are referring.

16- What is the reference for "the result is consistent with a recent study investigating AZF microdeletion in KS men".

17- The 10th paragraph of discussion should be reduced in size. The Pros and Cons of preoperative hCG or aromatase on SRR is out of aims of the current study.

18- It would be more informative if the authors use a Boxplot for presenting the "percentage of sperm retrieval rate by microscopic testicular sperm extractions" in Fig 2.
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