Reviewer’s report

Title: Does Obesity Have Detrimental Effects on IVF Treatment Outcomes?

Version: 4 Date: 13 April 2015

Reviewer: HELENE CAILLON

Reviewer’s report:

I thank the authors for this manuscript. I have several comments:

Discretionary revisions

- Results: For results of total gonadotropin dose, precise the trend of increase dose with BMI although it is not statistically significant.
- Table 1: can you add smoking status which has a major pejorative effect on fertility?
- Table 1: can you add AMH values?

Minor essential revisions

- Abstract: This study concerns 298 women after exclusion of underweight women and not 320.
- Abstract: The sentence “The treatment cycles were divided into three groups according to the weight of the women involved” is not exact and should be change for “The treatment cycles were divided into three groups of BMI: normal BMI…” because categorization is done on BMI and not on weight.
- Background: The sentence “Its significance is due to role on causing serious health consequences including…” is not so clear. Please find a new formulation (such as “Obesity has several serious consequences on health including…”)
- Background: please give more details on potential impacts of obesity on ART even if these impacts are still debated.
- Background: There isn’t any verb in this sentence “As the incidence of obesity is continually rising, increasing number of overweight and obese women are seeking fertility through assisted reproduction technology (ART)”
- Background: Women included underwent IVF-ICSI or just IVF? Because you don’t talk about IVF-ICSI later.
- Material and Methods: “During January 2008 and October 2013” should be change for “Between January 2008 and October 2013”
- Material and Methods: Verb is lacking in this sentence “Alternatively, GnRH antagonist short protocols started when the leading follicle reached 14 mm.”
- Material and Methods: “reach” is used twice in the same sentence “Human chorionic gonadotropin (HCG) was administered to stimulate the final stages of follicular development when follicles reached maturity, defined by two leading follicles reaching >18 mm”
- Material and Methods: « Embryo quality was assessed on the same day as transfer » should be change for « Embryo quality was assessed on the day of transfer »
- Material and Methods: ET should be defined at the first use
- Material and Methods: a space is lacking between 25 and IU/L
- Material and Methods: “b-hCG” should be corrected for “#-hCG”
- Material and Methods: the letter « t » is lacking for estradiol
- Material and Methods: Precisions on the expression of duration of stimulation is not necessary as units are not precised for others parameters
- Material and Methods: Simplify the sentence « Because of the reason that the number of women in underweight (n=22) group was low, these patients were excluded from the analysis » for « Because of a poor effective in underweight women group …”
- Results: suppress this sentence “(Higher the BMI score is associated with higher the gonadotropin dose and longer the stimulation duration)”
- Discussion: verb is lacking in this sentence “Additionally, it was also shown that a higher dose of gonadotropin stimulation and longer stimulation duration in women with BMI >30 kg/m2 compared with women with normal BMI”
- Tables: Text under tables is not clear, especially significance of a, b, and ab
- Table 2: add total gonadotropin dose per oocyte retrieved, total gonadotropin dose per MII oocyte and total gonadotropin dose per embryo
- Figure 1: title is not well placed. Use of * is ambiguous: prefer S for significant and NS for non-significant for example

Major compulsory revisions
- Results: I think that another analysis just on PCOS should be interesting (especially when you observe the trend on AFC and proportion of PCOS in the different subgroups), such as testing the same variables after exclusion of PCOS women to show if PCOS could be a bias or not
- Discussion: more hypotheses on the necessity of increasing gonadotropin dose with BMI to obtain equivalent outcomes should be cited. Thus, consequences on clinical practices should be evocated

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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

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