Reviewer’s report

Title: Randomized controlled trial of transcutaneous electrical nerve stimulation for pain relief during transvaginal oocyte retrieval using conscious sedation: study protocol for a randomized controlled trial

Version: 0 Date: 15 Nov 2018

Reviewer: Jenifer Dinis

Reviewer's report:

Inclusion/exclusion criteria

An exclusion criteria is oocyte retrieval performed on one ovary only. Rarely, egg retrieval from 2 ovaries is planned but the procedure is terminated after retrieval from one ovary. If this happens to a patient during the trial, will the patient then be excluded?

Patients with neurological disorders can possibly have a different response to the treatment. Patients with diabetes mellitus undergoing oocyte retrieval can occasionally have a pre-existing neuropathy. If a patient has a condition such as diabetes or neurological disorders, will they be included?

If a patient undergoing retrieval has a chronic pain disorder such as fibromyalgia or is on chronic treatment with analgesics such as opioids, will they be included in the trial?

Randomization sequence

Is there any type of stratification or blocks in the randomization sequence?

Intervention

The intervention is supposed to start 5 min prior and end 5 min after oocyte retrieval. Will the patient be already sedated 5 min prior to retrieval? If so, please explain: who will ensure that intervention is administered? As patient will likely be sedated 5 minutes after the end of the procedure, who will ensure that intervention stops 5 min after the procedure?

It is described that a research nurse will instruct the patients how to titrate the TENS amplitude prior to oocyte retrieval. Will there be any minimum/maximum current amplitudes set to be administered? Will the amplitude of impulses be recorded? If the amplitude is too low it can have less effect and bias the results towards the null.
How was the pulse duration chosen?

Is there a mechanism to verify that the TENS machine worked throughout the oocyte retrieval, to verify that the intervention was indeed administered as planned?

Blinding

If all patients will be instructed how to titrate the TENS machine until feeling paresthesia, in order for them to be blinded this means that all patients would have to do the titration with a working TENS machine, otherwise allocation would be revealed to the patient and the nurse at that time. Please explain: how will the patients be blinded to the intervention? Will the TENS machine be exchanged after titration? And if so, does it mean that the nurse assisting the patient during the titration is not blinded to the allocation?

Who will be collecting the primary and secondary outcomes (VAS score)? Will this person be blinded to the intervention?

Outcomes

As per "assessment of pain and sedation levels" section, "the maximum pain level on vaginal puncture and during oocyte recovery will be rated by the women shortly after the operation". Please specify how much time will pass "shortly after the operation", will the patient still be under the effects of sedatives at the time of collection of the primary outcome? Please specify when you expect the patient to be able to record a score on the VAS scale without being under the influence of sedatives.

Statistics

In the statistics section the stated primary outcome is "pain level during oocyte retrieval" which is to be measured by VAS scale, thus it will be a continuous outcome. The statistical plan is to analyze this data by Mann-Whitney test. Even if the data are skewed, the sample size is large enough to consider a t-test. Please explain why was this test chosen.

Is there a plan for secondary analysis?

Safety monitoring

Is there a plan to record adverse reactions from TENS such as skin rash?
Level of interest
Please indicate how interesting you found the manuscript:

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