Author's response to reviews

Title: Totally implantable venous access devices: analysis of different insertion techniques and predictors of complications in 796 devices implanted in a single institution

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Author's response to reviews: see over
Dear Editor,
we are submitting the revised version of our manuscript entitled "Totally implantable venous access devices: analysis of different insertion techniques and predictors of complications in 796 devices implanted in a single institution" for possible publication in your journal.
We hope that our answer could satisfactorily address the reviewers concerns and we are grateful for the opportunity to improve our paper.
Thank you for your consideration,

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Point by point reply:

**Editorial Requirements:**
We require some further clarifications regarding the source of the data used in your study. Could you please confirm whether the database used was freely available? If not, could we once again ask you to clarify who granted you permission to access it.

- The database was created and directly managed by our research group composed by the researchers detailed in the authors list, thus it was freely available to us.

**Reviewer 1**
No major review is requested. It is a well written paper that covered almost everything

**Reviewer 2**
1. Type of TIVAD missing. Single type used in all patients? This is important to be reported since different types may influence the study design and results.
   - We agree with the reviewer: this is a key point. We added this detail in the methods section. “All patients had the same type of TIVAD implanted: an M.R.I. Implantable Port with open end 8 French polyurethane single lumen venous catheter (C. R. Bard, Inc. Murray Hill, New Jersey, USA)”

2. Limitations section missing
   - we added the requested paragraph: “The main limit of this study is its retrospective design. Nevertheless, this limit was in part ridden over by the use of a prospectively collected database. The second limit of this study was the different sample size of the three groups. In fact, the first two groups are smaller than the last one. However, the overall sample size of the three groups was sufficient to make adequate comparison. Although our study provides a good definition of pro and cons of the different techniques a proper randomized controlled trial should be warranted to definitely determine the best TIVAD insertion technique.”

3. Discrepancy between discussion section (too short: 5 paragraphs) and the previous sections (Introduction/Materials/methods/results/conclusion: 16 paragraphs)
   - now the discussion is composed of 6 paragraphs and seems more proportioned

4. References do not follow a certain style
   - we reformatted the reference style

1. Needs language corrections and should be extensively edited before being published.
   - we had the paper revised by a native English speaker

2. There are substantial syntax/typographical errors that require correction.
   - we corrected syntax/typographical errors

**Introduction section:**

a. In general… (syntax error)
   - we changed “in general” into “usually”

b. Late complications include instead of includes
   - we deleted the s

c. ‘Continuous practice ….. life threatening complications,’ Please use correct English syntax in this phrase
   - we changed the phrase into “The refinement of the technique and the implanted devices led to a decreased rate of potential life threatening complications.”

d. ‘The aim of this study ……. a special focus on ultrasound guided implantation technique.’ Too long sentence -please rephrase using correct English.
• We shortened it as suggested “The aim of this study is to evaluate the short and long term outcomes after TIVAD implantation in a consecutive series of patients by comparing the different insertion techniques.”

Study design:
a. The main tumor types: please add breast cancer as you have included in the table
   • We added breast cancer

b. body habits. Please rephrase
   • we changed it into “body habitus”

Data collection and follow-up:
a. Needs editing
   • we had the paper revised by a native English speaker

b. Patients’ satisfaction or complaints about the device were also recorded. Where is that in the manuscript? It is not reported clearly.
   • The data are not homogeneous so we preferred to delete this section.

c. anaesthesiologist, I would recommend the more correct English term anaesthesiologist
   • we changed “in general” into “usually”

“Blind” percutaneous technique:
a. ‘The first access site was …… for the insertion.’ Please omit underline and rephrase using correct English.
   • we rephrased the sentence as suggested “The preferred access site was the subclavian vein (SV). The internal jugular vein (IJV) was chosen when SV cannulation was contraindicated for anatomic pitfalls.”

c. Ultrasound guided percutaneous technique: Too long description. This is a well known technique. Please shorten appropriately
   • we shortend it as suggested

Results:
Clinical outcome:
a. ‘The cost…..table 4’ please rephrase using correct English
   • we rephrased the sentence as suggested “The cost of US-guided TIVAD placement was significantly lower compared to cutdown approach and to percutaneous blind technique”

b. Last paragraph: did not require instead of did not required
   • we corrected the verb as suggested

c. The cost of the procedure is mentioned but the difference and benefit among the methods is not explained.
   • We explained the cost difference as follows “The cost expressed as cost of time of use of the operative room of US-guided TIVAD placement was significantly lower compared to cutdown approach and to percutaneous blind technique. In fact, in spite of the use of the same device, the duration of the procedure was significantly shorter in patients who had a US guided TVAD placement.”

Discussion:
a. Moreover: too many times used in the manuscript. I would suggest appropriate synonyms
   • we changed it into appropriate synonyms whenever possible

b. 1st paragraph of discussion: Therefore…rate. Needs editing
• we rephrased it as follows: “Ideally, TIVAD positioning should have a low rate of morbidity after insertion and in the long term follow up and should be easily tolerable for the patient during his daily routine.”

c. 2nd paragraph of discussion: In our series…. anatomical structures. Missing words - needs editing
• we rephrased it as follows: “In our series, US-guided insertion completely eliminated this complication probably because it provides a direct visualization of the needle and all the underlying anatomical structures during the whole procedure.”

d. 3rd paragraph. Please use one full-stop, please correct English especially in last sentence.
• we used one full stop as suggested. We rephrased the sentence as follows “The resource saving is obtained by shortening the time spent by clinicians and nurses to achieve successful cannulation and to deal with complications. This time saving procedure reduced the use of expensive operative room time.”

e. last paragraph. Please rephrase from Moreover…heparin. Missing words and meaning.
• We rephrased the sentence as follows “In fact, the infection of the pocket occurred more often after 20 weeks and after 60 weeks and this observation suggests that the postoperative infection is extremely rare and the cause of it are mainly related to its use (20 weeks peak) or lack of monthly maintenance (60 weeks peak). The second most important complication, thrombosis, can occur in around 4.7 to 8.46%24,25 but in our series it was much less frequent probably because of the regular rinsing of the catheter with heparin.”

Conclusion: Please correct
a. the results demonstrate
b. technique and
c. a real time
• we corrected the three errors as suggested

References:
Please see above comment
• we reformatted the reference style

Tables-Figures
Table 1: follow up completed (please add this in the main text and explain it accordingly), Hb I suggest correcting numbers
• we added the data in the follow up and we corrected Hb as suggested

Table 5: Intention to treat please use same font size in title
• we corrected it as suggested

Points that require Discretionary Revisions:
It would be valuable for the readers to be informed on the infection microorganisms that were isolated on the author’s series. This would strengthen the article.
• We added this information in the results section: “The microorganisms isolated in TIVAD related sepsis were candida glabrata, candida parapsilosis, bacillus species, streptococcus mitis, pseudomonas aeruginosa, and staphylococcus epidermidis.”

In addition, it is reported in the literature that patients with hematologic malignancies are more prone to infection and TIVAD extraction. Did the authors observe this?
• We addressed this interesting point in the discussion section “Curiously enough, in our series, hematologic malignancies were not more prone to infection and TIVAD extraction.”

Adding some radiologic/clinical figures from the complications encountered would also strengthen the value of the study.
• we added some figures as suggested