Reviewer’s report

Title: LIFESPAN AND ASSOCIATED FACTORS OF PERIPHERAL INTRAVENOUS CANNULA AMONG INFANTS ADMITTED IN PUBLIC HOSPITALS OF MEKELLE CITY, TIGRAY, ETHIOPIA, 2016

Version: 0 Date: 12 Dec 2016

Reviewer: Nicole Marsh

Reviewer's report:

Thank you for the opportunity to review your important work with peripheral intravenous catheters.

Please find my suggestions below:

Page 1 ABSTRACT

line 26: write out IV fully - intravenous. I would suggest replacing cannula with vascular access device in the following sentence - the most commonly used vascular access device to administer

Page 2 background

line 19: add (IV) after intravenous

line 23: a old reference, I suggest finding a more recent reference

line 37: reference this sentence.

line 38: define infiltration

line 46. I suggest restructuring this sentence possibly to: Non-elective removal of a peripheral intravenous cannula in neonates as a result of complication occurs in up to 95% if devices. I also suggest adding the Beall reference

line 58: capital p for Peripheral

line 59: please reference this sentence

Page 3

line 11: Please reference this sentence about PVC dwell times. I suggest saying that: cannulas have been or were reported to dwell without complication in patients for up to 144 hours...
line 33: What is downstream activity

line 41: Why have you chosen lifespan as your measure and not device failure or complications? A shorter lifespan is not always an indication of failure but could be due to a short period of treatment. In your data collection tool you have collected the reason for failure (dislodgement, complication and blocked). Have you considered a multivariate analysis for risk factor associated with PVC failure? I think this would be the most interesting outcome

Methods

Line 60: was this a cross sectional study or a prospective cohort study?

page 4

line 1: I suggest writing: a total of 178 participants from 2 hospitals were included

line 3: please explain your systematic random sampling?

line 7: Please define what continuous follow up means?

line 16: Change to Crude Odds Ratio

Results

line 45: I suggested were recruited not selected

line 47 and 49: this does not appear to be a median and inter quartile range but a mean and standard deviation?

Page 5

line 21: this does not appear to be a median and inter quartile range.

line 32: this does not appear to be a median and inter quartile range.

line 34: What is the difference between maintenance fluids and infused continuously?

TABLE 5
Please write COR and AOR as Crude odds ratio and adjusted odds ratio

I do not understand how you have calculated crude odds ratio. I would suggest further statistical assistance.

I also don't see the value of measuring the life span of the PVC. As I mentioned earlier many factors influence lifespan and on table 2 you have identified that 42 PVCs were removed without complication - was this due to the completion of treatment? This is almost 1/4 of your participants and has an impact on dwell time. I recommend that you look at risk factors associated with device failure. According to Table 2 (136 patients devices failed due to dislodgement, complication or blockage) it would be of greater clinically significance if you could identify the risk factors for device failure.

Discussion

line 37: I think this sentence is pointless. The PVCs lifespan is of course reduced is the PVC has a site complication or dislodges. Please rewrite. I also don't understand how dislodgement of the PVC is influenced by PVC insertion? Would it be more likely to be influenced by dressing and securement?

line 44: Please supply a reference

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Unable to assess

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review
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Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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