

PEER REVIEW HISTORY

BMJ Paediatrics Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Ultrasound-guided placement of long peripheral cannulas in children over the age of 10 years admitted to the emergency department: a pilot study
AUTHORS	Paladini, Angela; Chiaretti, Antonio; Pittiruti, Mauro; Sellasie, Kidane Wolde; Vento, Giovanni

VERSION 1 – REVIEW

REVIEWER	Damian Roland Institution and Country Leicester University and Leicester Hospitals, UK Competing interests N/A
REVIEW RETURNED	22-Dec-2017

GENERAL COMMENTS	<p>"The majority of children admitted to the Emergency Department (ED) require a peripheral intravenous access" I am afraid I strongly dispute this assertion and would need to be referenced if left in the paper. This may be your local practice but is not the case for the UK or other developed nations.</p> <p>"The most frequent indications for intravenous treatment are need for rehydration during gastroenteritis and forced fasting, infusion of intravenous drugs, and administration of a contrast medium to perform radiologic exams" Can you reference the numbers for these groups?</p> <p>"We prospectively evaluated pediatric patients, older than 10 years" My personal belief is that the fact that this is > 10 years should be in the title. These are a very different group of children than those below 5 years.</p> <p>"Seventy percent of patient in SC group reported episodes of dislocation/infiltration, occlusion and thrombosis, compared to 25% of children in LC group" Is there any comparison literature on this. 70% seems high and it would be useful to show that these patients weren't a different or biased cohort</p>
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REVIEWER	Andrew Miller Institution and Country Boston Children's Hospital USA Competing interests None
REVIEW RETURNED	30-Jan-2018

GENERAL COMMENTS	I think that this is a great pilot study of POCUS use for long PIV catheters over short PIV catheters. Clearly this adds to the literature and hopefully encourages someone to do a study that is randomized and powered appropriately to answer this question completely.
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	<p>Major point - I think that this should be re-read and edited as much of the manuscript, particularly the earlier portions, are difficult to follow. Additional editing needed for language, grammar, and phrasing.</p> <p>Specific thoughts: Page 2; Line 30 - Please cite this sentence. Page 3; Line 12 - Please cite</p> <p>Methods: Do the long catheters require heparinized solution for maintenance? If so this should be specified. Who performs the thrombosis check once long catheters are removed?</p> <p>Results/Discussion: Explain the difference in age/diagnosis for groups, I presume that this related to non-randomization, cooperativity of older patients with ultrasound guidance of catheter, and presumably the patients in surgical group may be more chronically ill having DIVA.</p>
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VERSION 1 – AUTHOR RESPONSE

To Damian Roland:

1. We agree with your disappointment, we considered our internal cases, so we changed the sentence in "Most of the children admitted to our emergency department (ED) require peripheral intravenous access".
2. A sentence has been added in the text: " All catheters were used for the administration of intravenous drugs (in 35 patients), rehydration of fluids (12 patients), replacement of fluids during fasting (34 patients) and rapid injection of contrast medium during radiologic exams (9 patients)."
3. Accordingly to the editor we have changed the title in "Ultrasound-guided placement of long peripheral cannulas in children over the age of 10 years admitted to the Emergency Department: a pilot study"
4. We don't know other reports in literature about the dwell time of peripheral vascular access in a similar population. Both groups performed intravenous therapies for more than 5 days, especially antibiotics, which may impact small venous integrity. They stayed in wards without sedation. In these conditions, the risk of peripheral catheter failure is high in our experience. We don't think that population characteristics (eg. medical or surgical diagnosis, age or sex) can influence results obtained.

To Andrew Miller:

1. We have cited line 30 and 12 in the texts
2. There is no evidence in literature on the efficacy of heparin or other anticoagulants in catheters used for infusion purposes (eg PICC, Midline, peripheral cannulas).
3. Ultrasound check were performed by trained operators of the hospital (nurses or physicians).
4. The differences in age and diagnosis can be explained by non-randomization. Furthermore we can consider two other hypothesis: the insertion of long catheters with a sterile procedure, without sedation, is more difficult for younger patients close to 10 years; generally in a surgical disease we need a peripheral venous access for more days.