Management of venous access devices by Advanced Practice Nursing Teams: More research needed

Authorship

All authors have made substantial contribution to all of the following: (1) the conception and design of the study, or acquisition of data, or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, (3) final approval of the version to be submitted.

Author names and affiliations:

Godelieve Alice Goossens^{a,b}; Marguerite Stas^a; Philip Moons^b,

^aDepartment of Surgical Oncology, University Hospitals Leuven, Herestraat 49, B-3000 Leuven, Belgium

^bCenter for Health Services and Nursing Research, Katholieke Universiteit Leuven, Kapucijnenvoer 35, Box 7001, B-3000 Leuven, Belgium

Corresponding Author:

Godelieve A. Goossens, PhD, Department of Surgical Oncology, University Hospitals Leuven, Herestraat 49, B-3000 Leuven, Belgium (godelieve.goossens@uzleuven.be)

Tel. +32 16 346831; Fax: +32 16 346834

This is a pre-copy-editing, author-produced PDF of an article accepted for publication in European Journal of Oncology Nursing following peer review. The definitive publisher-authenticated version “Management of venous access devices by Advanced Practice Nursing Teams: More research needed” (Eur J Oncol Nurs. 2012 Dec;16(5):473-4. doi: 10.1016/j.ejon.2012.08.006) is available online at:

<http://www.sciencedirect.com/science/article/pii/S1462388912000865>

We thank [name(s) of the author(s) of the letter to the editor] for their interest in the management of venous access devices by Advanced Practice Teams in general, and in our study entitled “Management of functional complications of totally implantable venous access devices by an advanced practice nursing team: 5 years of clinical experience” (Goossens et al., 2012) in particular. As we have indicated in the abstract and introduction of our article, the aim of the study was to describe the number, type and distribution of requests addressed to an Advanced Practice Nursing (APN) team for malfunction problems of totally implantable venous access devices (TIVADs); and to describe the malfunction management by the type and number of additional investigations and treatment modalities, such as thrombolytics and other treatments (Goossens et al. 2012). The design used for this purpose was a descriptive, retrospective study design (Goossens et al. 2012). In no way, we have claimed to have investigated the effectiveness of the Advanced Practice Nursing (APN) team, as compared to other management approaches. Such claims would require an experimental design including a control group, as [name(s) of the author(s) of the letter to the editor] correctly state. Neither have we claimed to demonstrate improvement of care or outcomes by implementing the APN team. In our conclusion, firstly, we state that the APN team CAN effectively manage malfunction; we did not stipulate that the APN team IS effective in managing malfunction. Furthermore, the adjective ‘effectively’ as used in the last sentence of our conclusion refers to the meaning ‘really, actually, truly’, and not to ‘producing a decided, decisive, or desired effect’ (Merriam-Webster Dictionary).

Secondly, we refer to more time and less stress for staff nurses where we, again, did not claim that we have found that the nurse’s stress WAS reduced and time WAS saved. However, from previous studies, we know that in case of difficult blood aspiration, staff nurses spent about 30 minutes in troubleshooting the port problems including re-accessing the port, flushing and repositioning the patient and, in some cases, the administration of thrombolytic agents. (Lamont et al., 2003) If staff nurses are confronted with functional problems and are not able to restore patency quickly, a delay in therapy or, in the worst case, a suspension of the therapy, with waste of the already prepared costly cytostatic drugs, is the

consequence. Therefore we can assume that, if the APN-team takes over the care for the patient with a dysfunctional port from the staff nurse, this time-consuming task will no longer interfere with the care needs of the other patients, within the limited time frame that staff nurses have.

Given these arguments, it is important that readers do not over interpret the last sentence of our conclusion. As [name(s) of the author(s) of the letter to the editor] suggest, this sentence was meant to be a reflection on what we could infer from the findings, rather than being the findings itself.

[Name(s) of the author(s) of the letter to the editor] suggest that a reduction in the number of repeat surgeries for device replacement for example could support the conclusion that APN teams manage malfunctions effectively. As reported in our article, in 175 (4.4%) of the requests to the APN team, TIVAD removal/exchange was advised; 141 of which were because of incorrect tip position, or another complication, such as sleeve formation, catheter kinking, pinch-off, catheter tear, or infection. Although unlikely, it might be possible that ports have been explanted in patients for whom the APN team was not consulted. But again, this falls outside the topic of our survey. The number of irreversible occlusions that require port removal we met were, however, substantially lower than those reported in a recent study, which reported an irreversible port occlusion rate of 6.2% (Bertoglio et al., 2012). In the Bertoglio study, no presence of an APN team for troubleshooting of malfunction problems is reported. If our study would have intended to investigate the effectiveness of the APN team using a control group, indeed, we could have looked for differences in irreversible TIVAD occlusion in the APN versus control group. But again, this was not the aim of our study.

We corroborate [name(s) of the author(s) of the letter to the editor]'s statement that experimental studies are needed to provide evidence of effectiveness of APN-teams in the prevention and management of malfunctioning TIVADs. However, we would advise not to limit studies on functional aspects and management of TIVADs to the sole role of APN teams, but rather to expand it to the broad concept of TIVAD management, including comparisons of different devices (Goossens et al., 2008); problems in the evaluation of

catheter functionality (Goossens et al. 2004) and to the important relation between catheter tip position and device malfunction (Caers et al. 2005). Indeed, the time has come to bring research on this subject to the next level, because we previously found that studies on functional complications in TIVADs generally lack methodological rigor.(Goossens et al., 2011)

Altogether, more research using strong designs is needed to evaluate the effectiveness of different management strategies in TIVADs, including the effects of APN teams. Our study published in the European Journal of Oncology Nursing was the first one to describe the management of TIVADs by an APN team, showing that malfunctions can be 'truly' managed by the team, without claiming the effectiveness of such a team in comparison with other approaches.

References

1. Bertoglio S, Solari N, Meszaros P, Vassallo F, Bonvento M, Pastorino S, et al., 2012. Efficacy of normal saline versus heparinized saline solution for locking catheters of totally implantable long-term central vascular access devices in adult cancer patients. *Cancer Nursing* 35: E35-E42.
2. Caers, J., Fontaine, C., Vinh-Hung, V., De Mey, J., Ponnet, G., Oost, C., et al., 2005. Catheter tip position as a risk factor for thrombosis associated with the use of subcutaneous infusion ports. *Supportive Care in Cancer* 13, 325-331.
3. Goossens, G.A., Stas, M., Jerome, M., Moons, P., 2011. Systematic review: malfunction of totally implantable venous access devices in cancer patients. *Supportive care in cancer* 19, 883-898.
4. Goossens GA, Verbeeck G, Moons P, Sermeus W, De Wever I, Stas M., 2008. Functional evaluation of conventional 'Celsite[®]' venous ports versus 'Vortex[®]' ports with a tangential outlet: a prospective randomised pilot study. *Supportive care in cancer* 16, 1367-74.
5. Goossens G.A., Stas M., Moons P., 2012. Management of functional complications of totally implantable venous access devices by an advanced practice nursing team: 5 Years

of clinical experience, European Journal of Oncology Nursing,
doi:10.1016/j.ejon.2011.11.006

6. Goossens GA, Vrebos M, De Wever I, Stas M., 2004. Vacutainer filling time through subcutaneous venous access devices. The journal of vascular access 5: 154-60.
7. Lamont, J.P., McCarty, T.M., Stephens, J.S., Smith, B.A., Carlo, J., Livingston, S., et al., 2003. A randomized trial of valved vs nonvalved implantable ports for vascular access. Proceedings (Baylor University Medical Center) 16, 384-387
8. m-w.com [Internet]. Merriam-Webster, an encyclopaedia Britannica company (US) Available from: <http://www.merriam-webster.com/dictionary/effective> accessed 13 July 2012.