Title:
Left Ventricular Assist Device Driveline Infection and the Frequency of Dressing Change in Hospitalized Patients

Lisa R. Wus
Jefferson School of Nursing, Thomas Jefferson University Hospital, Cherry Hill, NJ, USA

Session Title:
Rising Stars of Nursing Invited Posters - Group 1
Slot (superslotted):
RSG STR 1: Thursday, September 25, 2014: 9:45 AM-10:30 AM
Slot (superslotted):
RSG STR 1: Thursday, September 25, 2014: 2:30 PM-3:15 PM

Keywords:
driveline dressing change, quality improvement and ventricular assist device

References:
1. Go, A. S., Mozaffarian, D., Roger, V. L., Benjamin, E. J., Berry, J. D., Borden, W. B., … Turner, M. B. (2013). Executive summary: Heart disease and stroke statistics – 2013 update. Circulation, 127, 143-152. 2. Khazanie, P., Hammill, B. G., Patel, C. B., Eapen, Z. J., Peterson, E., Rogers, J. G.,… Hernandez, A., F. (2014). Trends in the use and outcomes of ventricular assist devices among Medicare beneficiaries, 2006 through 2011. Journal of the American College of Cardiology, 63(14), 1305-1404. 3. Bomholt, T., Moser, C., Sander, K., Boesgaard, S., Kober, L., Olsen, P. S., Hansen, P. B., Mortensen, S-A., Gustafsson, F. (2011). Driveline infections in patients supported with a HeartMate II: Incidence, aetiology, and outcome. Scandinavian Cardiovascular Journal, 45(5), 273-278. 4. Holman, W. L., Pamboukian, S. V., McGiffin, D. C., Tallaj, J. A., Cadeiras, M., & Kirklin, J. K. (2010). Device related infections: Are we making progress? Journal of Cardiac Surgery, 25(4), 478-483. 5. Cannon, A., Elliot, T., Ballew, C., Cavey, J., O'Shea, G., Franzwa, J., . . .Davis, E. (2012). Variability in infection control measures for the percutaneous lead among programs implanting long-term ventricular assist devices in the United States. Progress in Transplantation, 22(4), 351-359.

Learning Activity:

	LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE	TIME ALLOTTED	FACULTY/SPEAKER	TEACHING/LEARNING METHOD	EVALUATION/FEEDBACK
	Example Critique selected definition of the term, "curriculum"	**Example** Definitions of "curriculum" Course of study	**Example** 20 minutes	**Example** Name, Credentials	**Example** Lecture PowerPoint presentation Participant feedback	**Example** Group discussion: What does cultural training mean to you?

		Arrangements of instructional materials The subject matter that is taught Cultural "training" Planned engagement of learners				
	The learner will be able to define the problem of driveline infections for patients with a left ventricular assist device and the reasons for conducting this study.	Driveline: tunneled through the abdominal wall and connects the implanted pump to the external components of the device. Driveline infection: a significant source of morbidity and mortality for this population; nursing care is instrumental in preventing	10 min	Lisa Wus, MSN, RN, CRNP, PCCN-CMC	Poster Presentation Participant Feedback Discussion	Group discussion: Why is it necessary to conduct research regarding the driveline exit site?

		infection at the driveline exit site; no national guidelines or standardization for exit site care and frequency of dressing change				
	The learner will be able to discuss the implications of the study results for stakeholders involved in the care of patients with a left ventricular assist device.	It is reasonable to do the driveline dressing change less than daily. At the study center, weekly dressing changes are a reasonable option. Implications: no increase in infection rates with less than daily dressing changes	10 min	Lisa Wus, MSN, RN, CRNP, PCCN-CMC	Poster Presentation Participant Feedback Discussion	Group discussion: What implications dose this have for you and your practice?

Abstract Text:

Left ventricular assist devices (LVADs) provide a valuable therapeutic option for patients with end stage heart failure who will not survive until a donor organ becomes available or who are not transplant

candidates. Due to advanced LVAD technology and improved patient outcomes, the number of LVAD recipients continues to increase annually. This implantable mechanical circulatory support device includes a percutaneous driveline that exits through a puncture in the skin. Driveline exit site infections are known to be a serious complication, yet standardized guidelines for driveline exit site care do not exist resulting in wide variations in care, especially related to the frequency of dressing change. The purpose of this study was to determine if the frequency of exit site dressing changes is related to the incidence of driveline infection in hospitalized adult patients receiving a newly implanted LVAD. A retrospective medical record review was conducted to collect information and identify driveline infections on patients that were implanted with a HeartMate® II LVAD between August 2008 and September 2013. The study took place at an urban academic medical center that implants LVADs and has modified the frequency of dressing changes over a 5 year period. Eighty-six patients were implanted with a HeartMate® II LVAD. Sixty-eight patients met study eligibility. The Interagency Registry for Mechanically Assisted Circulatory Support criteria for driveline infection were used to define infection. The medical record reviews revealed no acute driveline infections during implant hospitalization or any 30 day readmissions for driveline infection. The frequency of the driveline dressing change varied from daily, three times a week, and weekly. The daily dressing change group was younger in age compared to the weekly group ($p=0.005$) and three times a week group ($p=0.001$). No other differences between the groups were found. The results of the study indicate that driveline infections do not appear to be related to the frequency of dressing changes in adult patients with a newly implanted LVAD. These data suggest that daily dressing changes are no longer warranted and that organizations should consider up to weekly changes.