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PHQ – 9 Scores does not predict driveline site infection in patients with a left ventricular assist device

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Introduction: Left ventricular assist device (LVAD) therapy can improve mortality and quality of life in patients with end-stage heart failure who are either waiting for or not a candidate for cardiac transplantation. 1 LVAD therapy is associated with significant complication and comorbidity including; device infection, bleeding, thrombus, stroke, and mechanical failure. 2 Patients with chronic heart failure have a high incidence of the major depressive disorder, which has been shown to negatively affect outcomes in patients being treated with medical therapy. 3 This study was designed to evaluate the relationship between LVAD driveline infection and depression.

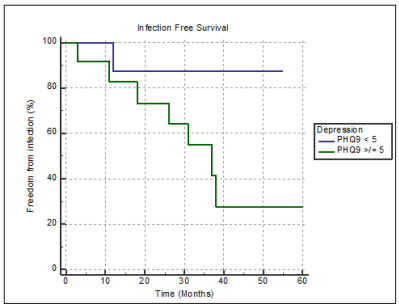

Figure 1: Kaplan Meyer curves for Infection free survival

Methods: After our study was approved by our local Institutional Review Board, we evaluated all left ventricular assist device patients who were implanted between January 2016 and November of 2017 who were implanted at Community Regional Medical Center and who underwent screening for depression with the Patient Health Questionnaire (PHQ) 9 prior to implantation. Chart review was performed to identify those patients with a documented history of driveline infection which was defined by either a positive culture from the driveline exit site or documentation of an infection which led to the use of antibiotics. Kaplan Meyer event-free survival curves were generated and the difference between the two curves was analyzed using the log-rank test. (Figure 1)

Results: Twenty-three patients were identified during the time period in question who met our inclusion criteria. 10 patients developed a driveline infection during the time in question. Of the 10 patients who developed a driveline infection, 9 patients had score ≥ 5 on the PHQ-9 score indicating possible depression, while only 1 patient who scored < 5 had documented driveline infection (HR 5.3391, 95% confidence intervals 1.407 to 20.257, P = 0.064). Meantime to development of a driveline infection was 49 months in the PHQ < 5 group as compared to 35 months in the PHQ ≥ 5 group.

Conclusion: Depression, as indicated by a score of ≥ 5 on the PHQ 9 score, does significantly predict driveline infections. Our data did show a strong signal and was likely underpowered to detect a significant difference during our observation period. Further testing using a larger sample size may provide a more definitive answer to the relationship between driveline exit site infections and depression.

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