PREDICTORS OF PROCEDURAL DIFFICULTY DURING BIVENTRICULAR DEVICE IMPLANTATION: A UNIVERSITY HOSPITAL EXPERIENCE

ACC Moderated Poster Contributions
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Background: Biventricular (BiV) device implantation with insertion of a transvenous left ventricular (LV) lead can be complicated. We sought to identify predictors of procedural difficulty as measured by fluoroscopy time and predictors of implant failure.

Methods: We performed a single center, retrospective study of 272 patients undergoing BiV implantation between 2004-2011. We used multivariate linear regression to assess predictors of fluoroscopy time and logistic regression to identify predictors of implant failure.

Results: The mean age was 64±14.6 years. The mean fluoroscopy time during BiV implant was 42.4±25.7 minutes. After multivariable adjustment, predictors of longer and shorter fluoroscopy times are shown in Figure 1. Inability to implant an LV lead occurred in 22 cases (8%), with failure to cannulate the coronary sinus (CS) and atretic CS veins being the most common reasons (8 of 22 failed LV lead implants each). A previous failed attempt was the only significant predictor of LV lead implantation failure (OR=33.5, 95% CI 3.2-352.6, p=0.003).

Conclusions: A history of surgery for congenital heart disease, previous failed attempt and right sided approach were associated with longer fluoroscopy time whereas an LV lead upgrade procedure, attending physician experience and electrophysiology fellow experience were associated with shorter fluoroscopy time during LV lead implantation. Attempts to implant an LV lead failed in 8% of cases, which was predicted only by a previous failed attempt.