MITRAL REGURGITATION OF DEGENERATIVE AS OPPOSED TO FUNCTIONAL ORIGIN NEGATIVELY IMPACTS OUTCOMES OF MITRACLIP THERAPY: SINGLE-CENTER EXPERIENCE WITH 255 CONSECUTIVE PATIENTS

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MitraClip implantation is increasingly used to treat significant mitral regurgitation (MR) in patients deemed at high risk for surgical intervention. Between 09/2008 and 11/2011, 255 consecutive patients (74 ± 9 years, 162 [64%] men, LV ejection fraction 43 ± 16%, logistic EuroSCORE 29 ± 19%, STS mortality score 15 ± 11%) underwent MitraClip therapy at our center. All patients were adjudicated as not amenable to surgery by heart team consensus. MR of grade 3+ and 4+ was present in 57 and 43% of patients, respectively. MR etiology was functional in 61%, degenerative in 25%, and mixed in 14% of patients.

One or more clips were implanted in 245 procedures (1 clip in 155, >1 clip in 90 procedures). Overall procedural success rate, defined as residual MR severity of grade 2+ or less, was 89% (n = 228 procedures). Median device time, i.e., time from septal puncture to withdrawal of the clip delivery system from the left atrium, amounted to 66 minutes (interquartile range, 42 to 105 minutes). In the 228 successful procedures, MR severity was significantly reduced from grade 3+ (60%) or 4+ (40%) at baseline to grade 1+ (39%) or 2+ (61%) at discharge (P < 0.0001). When patients were dichotomized by MR etiology (purely functional [FMR] vs. degenerative/mixed [DMR]), a significantly lower procedural success rate was noted in DMR patients (82/99 [82.8%] vs. 146/156 [93.6%], P = 0.011). To achieve procedural success, DMR patients tended to require more often multiple clips (34/82 [41.5%] vs. 44/146 [30.1%], P = 0.109). Device times were not impacted by MR etiology. Successfully treated DMR patients were significantly less often discharged with MR grade 1+ (25/82 [30.5%]) than FMR patients (64/146 [43.8%], P = 0.049). At 90 days, freedom from MV surgery in DMR patients was significantly less than in FMR patients (86.3% vs. 97.0%, P = 0.004).

Degenerative/mixed etiology of MR is associated with lower procedural success of MitraClip therapy, increased use of multiple clips and a lower prevalence of MR grade 1+ at discharge and necessitates more often MV surgery post MitraClip. Further study is required to possibly assess specific morphological features of DMR predictive of acute treatment failure.