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Is Spontaneous Termination of Atrial Fibrillation During Hybrid Ablation a Predictor of Clinical Outcome in Patients With Persistent Atrial Fibrillation?

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Is Spontaneous Termination of Atrial Fibrillation During Hybrid Ablation a Predictor of Clinical Outcome in Patients With Persistent Atrial Fibrillation?

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Background: An epicardial/endocardial (hybrid) ablation approach has emerged as an option to treat a difficult population of patients with persistent atrial fibrillation (AF). Limited information exists on the importance of AF termination as a predictor of clinical outcome during hybrid ablation.

Purpose: This retrospective study aimed to demonstrate the significance of spontaneous AF termination during hybrid ablation of persistent AF.

Methods: We studied results from 63 consecutive hybrid ablations in patients with no prior ablation, a mean (± standard deviation) persistent AF duration of 19 ± 16 months and a mean follow-up of 27 ± 13 months. Patients received both epicardial ablation of the posterior left atrial wall using a small midline approach and a stepwise endocardial ablation (pulmonary vein isolation, ablation of complex fractionated atrial electrograms and/or linear lesions) with AF termination as the procedural endpoint. Spontaneous AF termination during the procedure was defined as conversion of AF to either sinus rhythm or atrial flutter (AFL), which subsequently converted to sinus rhythm during the above ablation techniques (Group 1). For patients not terminating to sinus rhythm with the above steps, electrical and/or pharmacological cardioversion was used (Group 2). Arrhythmia-free survival was defined as no arrhythmia (AFL or AF) following an initial 90-day period. To determine time to arrhythmia, ambulatory monitoring and/or electrocardiogram results during follow-up visits were collected. Arrhythmia-free survival at 12 months was determined using Kaplan-Meier estimates.

Results: There were no statistically significant differences between the two groups in baseline characteristics such as age, duration of persistent AF, body mass index, CHA2DS2-VASc score, left atrial size, or left ventricular ejection fraction (P=ns for all). There also was no significant difference in total ablation time between the two groups (P=0.1). Arrhythmia-free survival at 12 months for those with (Group 1) and without (Group 2) spontaneous AF termination during the procedure was 56% and 58%, respectively (P=0.7). AF-free survival was not significantly different between Group 1 and Group 2 (74% vs 79%, P=0.9), nor was AFL-free survival (66% vs 57%, P=0.4).

Conclusion: Spontaneous conversion to sinus rhythm during the ablation procedure versus the need for cardioversion is not a good predictor of clinical outcome in a challenging population of patients with a long history of persistent AF who undergo the hybrid ablation procedure.

Predictors of Stillbirth Using a Large Database From the State of Wisconsin

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Background: Stillbirth remains a significant problem in modern obstetrics. The exact causes for many stillbirths remain unexplained, although some risk factors have been identified.

Purpose: To identify the main risk factors for stillbirth using a large dataset, we examined incidence of stillbirth for the state of Wisconsin from 2012 through 2016.

Methods: We conducted a retrospective study using de-identified data for 323,034 pregnant women who gave birth to singleton babies in the years 2012 through 2016; 73% of the women were white, 11% African American and the remaining 16% were from other races. Birth weight percentage by gestational age was calculated using 10th and 90th percentile of the baby birth weight in grams and was divided into three groups (small, appropriate, large). Risk factors for stillbirth were explored using univariate and multivariable logistic regression analysis.

Results: Overall, the prevalence of stillbirth, defined in the United States as loss of a baby after 20 weeks of pregnancy, is about 1 in 160 pregnancies (6.3 per 1000). In the present study population from the state of Wisconsin, the rate of stillbirth was 4.1 per 1000. Mean age ± standard deviation for the women was 28.43 ± 5.5 years. The highest risk factor for stillbirth was small for gestational age (odds ratio [OR]: 15.6, 95% confidence interval [CI]: 13.7–17.8, P<0.001), followed by diabetes (OR: 3.5, 95% CI: 2.5–5.1; P<0.001), chronic hypertension (OR: 1.5, 95% CI: 1.1–1.9; P<0.009), body mass index > 30 kg/m² (OR: 1.5, 95% CI: 1.3–1.7; P<0.001), and every 10-year increase in the age of the mother (OR: 1.2, 95% CI: 1.1–1.3; P<0.003). In contrast, married women (OR: 0.8, 95% CI: 0.7–0.9; P=0.009), women with higher education (OR: 0.7, 95% CI: 0.6–0.8; P<0.001), and women receiving infant care (OR: 0.5, 95% CI: 0.4–0.6; P<0.001) were less likely to have stillbirth.

Conclusion: Stillbirth prevalence in the state of Wisconsin is lower than the national average. Small for gestational age, which may be unrecognized intrauterine fetal growth restriction, was main predictor of stillbirth. Preventive strategies should focus on improving prenatal detection of fetal growth restriction, treatment of comorbid conditions such as diabetes and hypertension, and management for obesity among pregnant women.