**CHROMOSOME 4Q25 VARIANTS AND ATRIAL FIBRILLATION RECURRENCE AFTER CATHETER ABLATION**

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Objectives: This study tested the hypothesis that chromosome 4q25 single-nucleotide polymorphisms (SNPs) associate with atrial fibrillation (AF) recurrence after catheter ablation.

Background: Recent genome-wide association studies identified 2 SNPs on chromosome 4q25 associated with AF.

Methods: A total of 195 consecutive patients (mean age 56 +/- 12 years, 73% male) with drug-refractory paroxysmal (78%) or persistent (22%) AF who underwent AF catheter ablation were included. Two SNPs, rs2200733 and rs10033464, were genotyped using real-time polymerase chain reaction and fluorescence resonance energy transfer. Serial 7-day Holter electrocardiographic recordings were acquired to detect AF recurrences.

Results: Early recurrence of atrial fibrillation (ERAF) (within the first 7 days) was observed in 37%, whereas late recurrence of atrial fibrillation (LRAF) (between 3 and 6 months) occurred in 21% of the patients. None of the clinical or echocardiographic baseline characteristics were associated with ERAF or LRAF. In contrast, the presence of any variant allele increased the risk for both ERAF (odds ratio [OR]: 1.994, 95% confidence interval [CI]: 1.036 to 3.837, p = 0.039) and LRAF (OR: 4.182, 95% CI: 1.318 to 12.664, p = 0.011). In patients with ERAF, 45% had LRAF, as opposed to 8% in patients without ERAF (OR: 9.274, 95% CI: 3.793 to 22.678, p < 0.001).

Conclusions: Polymorphisms on chromosome 4q25 modulate the risk for AF recurrence after catheter ablation. This finding points to a potential role for stratification of AF ablation therapy or peri-interventional management by genotype.