Title: I-CLAS: Arrhythmic Risk in Biventricular Pacing Vs Left Bundle Branch Area Pacing
Participants: Dr Pugazhendi Vijayaraman
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Dr Pugazhendi Vijayaraman

"Hi, I'm Pugal Vijayaraman from Geisinger Heart Institute. I'm a professor of Medicine at Geisinger Commonwealth School of Medicine.

Importance of This Study

This study was primarily aimed to assess the arrhythmia risk in patients who undergo cardiac resynchronization therapy with two different forms of pacing. One was the traditional biventricular pacing, the other was a newer physiologic pacing called left pulmonary branch area pacing. We were looking at the incidence of ventricular tachycardia or ventricular fibrillation, and also nuanced atrial fibrillation in this population.

Study Design and Eligibility Criteria

This was a non-randomised, retrospective observational, large cohort study. It happened at 15 international centres across the globe. We had about 1778 patients, and we performed one-to-one propensity-matched scoring and created a group of patients of 707 patients in each group for biventricular pacing and left bundle branch area pacing. So all the potential confounders were equalised and then looked at the clinical outcomes in terms of arrhythmia risk in this group of patients.

Key Findings

So we're happy to find that physiologic pacing with left bundle branch area pacing compared to biventricular pacing in this population reduced the risk and the time to occurrence of ventricular tachycardia or ventricular fibrillation. The overall incidence was about 9% in the biventricular pacing group, compared to around 4.5% in the left

bundle branch area pacing with greater than 50% risk reduction. And similarly, the incidence of new-onset atrial fibrillation was even more significantly reduced about 65% reduction in patients who undergo biventricular left bundle branch area pacing compared to those who undergo biventricular pacing.

Take-Home Messages

Yeah, it looks like when you do physiologic pacing, we get greater electrical resynchronization, greater mechanical resynchronization, greater reverse remodelling of the heart, thereby reducing the risk of arrhythmias, both in terms of ventricular arrhythmias and atrial arrhythmias. So it looks like, compared to biventricular pacing, left bundle branch area pacing may be a better form of pacing to resynchronize hearts. And this needs to be confirmed in future randomised clinical trials.

Further Study Needed

So we do have an ongoing randomised clinical trial called left versus left. It is a 2136 patient study. All of the centres that participated in this study are also going to be a big part of that study. It's going to be a five to seven year follow-up study looking at overall outcomes of mortality, heart failure, day, hospitalisation, and all the other parameters that we're talking about arrhythmia risk, atrial fibrillation, and hopefully, this will give us an answer to change the paradigm of pacing in the future.”