

**Title: ACC.24: Periprocedural Cerebral Embolisms and Catheter Ablation of AF: The Embo-Abl Study**  
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## **Dr Kengo Kusano**

### **"Introduction**

I'm Kengo Kusano from the National Cardiovascular Centre in Osaka, Japan.

### **Background and Study Rationale**

Catheter ablation for atrial fibrillation is a standard therapy, but it does come with some side effects. Thromboembolic complications during catheter ablation range from 0.5% to 1%. However, silent cerebral embolism has been observed in 10% to 40% of patients, as detected by MRI.

### **Study Objectives**

Our study aimed to compare the incidence of ischemic stroke following catheter ablation using cryoballoon versus radiofrequency (RF) ablation. We specifically sought to evaluate the non-inferiority of cryoballoon ablation compared to RF ablation with respect to silent cerebral embolism. To achieve this, we used three Tesla brain MRI to detect silent cerebral embolism and also investigated microembolic sources using simultaneous echocardiography during the procedure.

### **Study Design and Methods**

We enrolled 230 patients in a 1:1 fashion, with 115 patients in each group. We assessed both echocardiography and MRI results to evaluate our endpoints.

### **Results**

The primary endpoint, silent cerebral embolism, was observed in 27 patients overall. This included 16 patients (13.7%) in the cryoballoon group and 11 patients (9.7%) in the RF group. There was no significant difference in carotid embolisms between the groups. However, the cryoballoon ablation group had significantly fewer microembolic signals compared to the RF group.

### **Further Analysis**

We also investigated the relationship between microembolic signals and silent cerebral embolism in MRI data. We found no significant associations between microembolic signals and silent cerebral embolism. Additionally, no procedure-related, patient-related, or microembolic signal-related risk factors were identified in this study.

### **Conclusions**

The MRI results were lower than anticipated. Our study demonstrated that both cryoballoon and RF ablation are effective treatments from a safety perspective. We identified numerous embolic sources through echocardiography, indicating that further investigation is needed, particularly focusing on the embolism into cerebral vessels.”