Pulmonary vein isolation (PVI) has become an established treatment for patients with atrial fibrillation (AF). However, peri-intervention complications like TIA, stroke and cognitive decline related to cerebral emboli may occur. The incidence of microembolic signals (MES) was determined during percutaneous PVI; conventional radiofrequency (RF) ablation, irrigated tip RF ablation and cryo balloon ablation were compared.

Methods: Twenty-three patients underwent catheter PVI. An ostial isolation was performed with a conventional RF ablation catheter in 10 patients and with an irrigated tip RF ablation catheter in 6 patients. A Cryo balloon was used in 7 patients for circular isolation of the ostia. Transcranial Doppler (TCD) was used to detect cerebral MES.

Results: Comparing the total number of MES per procedure and per minute of ablation, the irrigated RF tip catheter and the cryo balloon catheter generated significantly less cerebral MES than the conventional RF catheter.

Conclusions: PVI procedures causes a significant number of...