Clopidogrel on Top of Aspirin for the Prevention of New-onset Migraine Headache Attacks Following Transcatheter Closure of Atrial Septal Defects: A Prospective, Randomized, Double Blind Trial (CANOA)

Josep Rodes-Cabau, Quebec Heart & Lung Inst, Quebec City, QC, Canada; Eric Horlick, Toronto General Hosp, Toronto, ON, Canada; Reda Ibrahim, Montreal Heart Inst, Montreal, QC, Canada; Asim Cheema, St Michael's hospital, Toronto, ON, Canada; Marino Labinaz, Ottawa Heart Inst, Ottawa, ON, Canada; Najef Nadeem, Queen Elizabeth II Health Sciences Ctr, Halifax, NS, Canada; Mark Osten, Toronto General Hosp, Toronto, ON, Canada; Melanie Cote, Quebec Heart & Lung Inst, Quebec, QC, Canada; Donald Rivest, Hotel Dieu de Levis, Levis, QC, Canada; Alier Marrero, Ctr Hospier Univire George L Dumont, Moncton, NB, Canada; Christine Houde, Ctr Univire Hospier de Quebec, Quebec, QC, Canada; Josep Ramon Marsal, Epidemiology Unit, USR, Lleida-Pirineu, Spain

Background. The occurrence of new-onset migraine attacks (MA) is a well-known complication of transcatheter atrial septal defect (ASD) closure. It has been suggested that clopidogrel may reduce MA following ASD closure. The objective of this study was to assess the efficacy of clopidogrel on top of aspirin for the prevention of MA following ASD closure.

Methods and Results. This was a prospective, multicenter, randomized, double blind controlled trial. Patients with indication for ASD closure and no prior history of MA were randomized (1:1) to receive dual antiplatelet therapy (DAT, aspirin+clopidogrel) versus single antiplatelet therapy (SAT, aspirin+placebo) for 3 months following ASD closure. The occurrence and severity of MA were evaluated by a structured migraine headache questionnaire (including the Migraine Disability Assessment [MIDAS] test) at 1- and 3-month follow-up in addition to a headache diary. A total of 171 patients (49±15 years, 106 women) were included (87 and 84 in the SAT and DAT groups, respectively). All patients had successful transcatheter ASD closure with the Amplatzer septal occluder device with no major complications. Patients in the DAT group had a lower incidence of MA following ASD closure (21.8% vs. 9.5%, OR: 0.38, 95% CI: 0.15-0.89, P=0.031), and a reduced number of monthly MA days within the 3 months following the procedure (IRR: 0.61, 95% CI: 0.41-0.91, P=0.035). In patients with MA, those in the DAT group had less severe MA as evaluated by the MIDAS test (no patient with moderately or severely disabling MA in the DAT group vs.37% in the SAT group, P=0.046).

Conclusions. Clopidogrel on top of aspirin reduced the occurrence and severity of MA following ASD closure. These results suggest the potential role of prothrombotic status on the pathogenesis of migraine in such patients.

Clinicaltrials.gov:NCT00799045