AEPC YIA Session

AEPC YIA Session（ II-AEPCYIA）

Chair: Hiroshi Ono（National Center for Child Health and Development, Japan）
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[II-AEPCYIA-1]Atenolol should not be the ß-blocker of choice for symptomatic children with catecholaminergic polymorphic ventricular tachycardia

○Puck J. Peltenburg[1], Krystien V.V. Lieve g[1], Christian van der Werf g[1], Isabelle Denjoy g[2], Guillermo Perez g[3], Carmen Perez[3], Ferran Roses i Noguer[4], Johan M. Bos[5], Connor Lane[5], Vibeke M.Almaas[6], Aurora Djubsjöbacka[7], Sing C. Yap[8], Yuko Wada[9], Thomas Roston[10], Veronica Dusi[11], Takeshi Aiba[12], Maarten van den Berg[13], Thomas Robyns[14], Jason Roberts[15], Esther Zorio[16], Udi Chorin[17], Sally-Ann B. Clur[1], Nico A. Blom[1,18], Martin Borggrefe[19], Andrew M.Davis[20], Jon Skinner[21], Elijah Behr[22], Christopher Semsarian[23], Prince J. Kannankeril[24], Jacob Tfelt-Hansen[25], Frederic Sacher[26], Wataru Shimizu[12], Peter J. Schwartz[11], Shu Sanatani[10], Seiko Ohno[9], Janneke Kammeraad[8], Heikki Swan[7], Kristina Haugaa[6], Vincent Probst[27], Michael J. Ackerman[5], Janice A. Till[4], Ramon Brugada[3], Arthur A.M. Wilde[1], Antoine Leenhardt[2],
(1.AmsterdamUMC - location AMC, the Netherlands, 2.Hôpital Bichat, Paris, France, 3.Universitat de Girona-IDIBGI, Girona, Spain, 4.Royal Brompton Hospital, London, United Kingdom, 5.Mayo Clinic, Rochester, United States, 6.Oslo University Hospital, Oslo, Norway, 7.Helsinki University Hospital and Helsinki University, Helsinki, Finland, 8.Erasmus Medical Center, Rotterdam, the Netherlands, 9.Shiga University of Medical Science, Otsu, Japan, 10.University of British Columbia, Vancouver, Canada, 11.Istituto Auxologico Italiano, IRCCS, Center for Cardiac Arrhythmias of Genetic Origin, Milan,Italy, 12.National Cerebral and Cardiovascular Centre, Suita, Osaka, Japan, 13.University Medical Centre, Groningen, the Netherlands, 14.University Hospitals Leuven, Leuven, Belgium, 15.Western University, London, Canada, 16.Hospital La Fe, Valencia, Spain, 17.Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, 18.Leiden University Medical Center, Leiden, the Netherlands, 19.University Medical Centre Mannheim, Mannheim, Germany, 20.The Royal Children's Hospital Melbourne, Melbourne, Australia, 21.Starship Children's Hospital, Auckland, New Zealand, 22.St. George's, University of London, London, United Kingdom, 23.Royal Prince Alfred Hospital, Sydney, Australia, 24.Vanderbilt University Medical Center, Nashville, United States, 25.Rigshospitalet, Copenhagen, Denmark, 26.Bordeaux University Hospital, Bordeaux, France, 27.CHU de Nantes, Nantes, France,)

Introduction
Children with catecholaminergic polymorphic ventricular tachycardia (CPVT) are at risk for malignant ventricular arrhythmias during exercise and emotions, which may lead to arrhythmic events such as sudden cardiac death (SCD). Symptomatic patients are at particular risk for the reoccurrence of arrhythmic events. Beta-blockers are the cornerstone of therapy in patients with CPVT. However, studies comparing the efficacy of different types of betablockers are scarce. We aimed to determine the efficacy of different types of beta-blockers in reducing the risk for recurrent arrhythmic events in a large cohort of symptomatic children with CPVT.
Methods
Data were derived from the International CPVT Registry, a large retrospective observational cohort study. We included symptomatic children aged <19 years who were carrier of a RYR2 variant and who were prescribed a beta-blocker. The primary endpoint was the occurrence of an arrhythmic event (AE),

defined as SCD, aborted cardiac arrest, appropriate ICD discharge or syncope. Time-dependent Cox-regression analyses were used to compare the occurrence of AEs between different beta-blockers corrected for possible confounders with nadolol as reference group.

Results

We included 267 children treated with a beta-blocker. One hundred five (39.3%) children were first treated with nadolol, 64 (24.0%) with propranolol, 43 (16.1%) with atenolol, 26 (9.7%) with metoprolol and 21 (7.9%) bisoprolol. Age at initiation of beta-blocker differed between the groups, with the youngest mean age in propranolol and highest in bisoprolol and metoprolol (10±4 years in propranolol, 13±4 years in bisoprolol and nadolol, overall-p=0.023). Sex, the proportion of probands and the proportion of patients treated with flecainide, left cardiac sympathetic denervation and an ICD were equally distributed among all groups. In total 86 (32.2%) children had an AE. The AE-rate was significantly higher in patients treated with atenolol compared to nadolol (hazard ratio (HR) 2.15, 95% confidence interval (CI) 1.05-4.40, p=0.036, Table). There were no significant differences in the AE-rate in patients treated with bisoprolol (HR 2.08, 95% CI 0.92-4.71), metoprolol (HR 1.79, 95% CI 0.82-3.92), and propranolol (HR 1.55, 95% CI 0.84-2.86) compared with nadolol.

Conclusions

Atenolol is associated with a higher risk for a subsequent arrhythmic event in symptomatic children with CPVT compared to nadolol.