

Topic 04-Valvular heart disease

January 14th, Thursday 2016

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Prognostic impact of pulmonary arterial pressure in patients with aortic stenosis and preserved left ventricular ejection fraction

Julien Magne*, Cyrille Boulogne, Mathieu Deltreuil, Vincent Petitalot, Najmeddine Echahidi, Claude Cassat, Patrice Virot, Marc Laskar, Dania Mohty, Victor Aboyan

CHU Limoges, Limoges, France

*Corresponding author: jul.magne@yahoo.fr (Julien Magne)

Background The prognostic impact of pulmonary arterial pressure (PAP) remains controversial in aortic stenosis (AS) and few studies focused only on patients with preserved left ventricular ejection fraction (LVEF). We therefore aimed to investigate the impact of PAP, derived from our large catheterization database, on survival in severe AS with preserved LVEF.

Methods and results Between 2000 and 2010, 749 patients (74±8y, 57% of males) with preserved LVEF and severe AS without other valvular heart disease underwent cardiac catheterization, including right heart hemodynamic assessment. Pulmonary hypertension (PH) was defined as mean PAP >25mmHg.

Systolic and mean PAP were 34.5±12 and 21.9±9mmHg, respectively. Overall, 29% (n=215) of patients had PH, and these patients were significantly older (p<0.0001), with lower LVEF (p<0.0001) and higher heart rate (p=0.016) than those without PH. In addition, they more frequently had, hypertension (p<0.0001), diabetes (p=0.001), coronary artery disease (CAD, p<0.0001) and chronic pulmonary disease (p=0.043). Aortic valve replacement (AVR) was performed in 91% of patients and 30-day mortality was 4.3%, significantly higher in patients with PH (7.7 vs. 3.4%, p=0.014). In logistic regression analysis, after adjustment for age, gender, LVEF, CAD and mean transaortic pressure gradient, mean PAP was an independent predictor of increased 30-day mortality (OR=1.06, 95% CI: 1.02-1.1, p=0.004). Overall long-term survival was significantly reduced in patients with PH as compared to those without PH (10-year survival: 41±8 vs. 61±3%, p<0.0001). In multivariate analysis, after adjustment for all cofactors, PH was an independent predictor of mortality (HR=1.5, 95% CI: 1.1-2.1, p=0.037).

Conclusion In patients with severe AS and preserved LVEF, PAP is an independent predictor of both 30-day and long-term mortality. In order to improve the prognosis of these patients, AVR could be considered before the occurrence of severely elevated PAP.

The author hereby declares no conflict of interest

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His bundle recording during and after TAVR to predict early and late atrio-ventricular block

Nicolas Badenco*, Caroline Nguyen, Robert Frank, G. Duthoit, Carole Maupain, Françoise Hidden-Lucet, Pascal Leprince, E. Gandjbakhch, Xavier Waintraub, Jean-Philippe Collet

APHP-GH Pitié-Salpêtrière, Paris, France

*Corresponding author: nicolas.badenco@psl.aphp.fr (Nicolas Badenco)

Background Early and late atrioventricular blocks (AVB) are frequent during trans-aortic valve replacement (TAVR) leading to permanent pacemaker (PPM) implantation.

Whether His Bundle recording (HBR) during and after TAVR can predict AVB remains a matter of debate.

Objective To correlate HV interval during and after TAVR with early and late AVB occurrence.

Methods Between January 2013 and December 2014, HBR was assessed prospectively before balloon inflation (HV1), 15minutes after (HV2), and at day 2 and 5 for Sapiens and CoreValve (HV3) in all pacemaker-free patients undergoing TAVR. PPM was implanted when permanent AVB persisted over day, or if paroxysmic AVB occurred within the first 5 days or if HV3 >80ms. Logistic regression was performed to assess if HVB could well predict early (from day 1 to day 5) or late (from day 5 to day 30) AVB occurrence.

Results 86 patients aged of 85±8,2 years old, with a Euroscore of 15,3±9,3 and of whom 50(79%) were female were recruited. Corevalve was predominantly used (59(66%)). HV1, HV2 and HV3 were 56±9ms, 70±19ms and 63±14ms respectively. In total, 29 (34%) PPM were implanted before discharge of which 18 (19,7%) for documented AV bloc, 8 for prolonged HV interval and 3 for sick sinus syndrome. 12 patients (13,9%) showed AVB during follow-up after discharge, all implanted for early AVB. There was no AVB recorded in PPM for prolonged HV interval, programmed with a diagnostic atrio-ventricular conduction preservation algorithm. HV1 and HV2 were not associated with early AVB occurrence (p=0,79 and p=0,34 respectively).

Prolonged HV1, HV2 or HV3 did not predict late AVB occurrence either (p=0,54, p=0,90 and p=0,91 respectively).

Conclusion High degree AVB is a common finding after TAVR and can occur late. Repeated HBR before and after TAVR did not show any significant predictive value for early and delayed AVB.

The author hereby declares no conflict of interest

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Seven-year outcome after TAVI

Benjamin Alos* (1), Claire Bouleti (1), Dominique Himbart (1), Bernard Jung (1), Marina Urena (1), Marie-Pierre Dilly (2), Eric Brochet (2), Phalla Ou (3), Patrick Nataf (4), Alec Vahanian (4)

(1) APHP-Hôpital Bichat-Claude Bernard, Cardiologie, Paris, France – (2) APHP-Hôpital Bichat-Claude Bernard, Anesthésiologie, Paris, France – (3) APHP-Hôpital Bichat-Claude Bernard, Radiologie, Paris, France – (4) APHP-Hôpital Bichat-Claude Bernard, Chirurgie cardiaque, Paris, France

*Corresponding author: benjamin.alos@outlook.com (Benjamin Alos)

Background and aim TAVI is increasingly used but few data exist on long-term outcome.

We analyzed 7-year outcome after TAVI and its predictive factors.

Methods Between 2006 and 2011, 289 consecutive high-risk patients (EuroScore 23±14%) underwent TAVI in our institution. Mean age was 82±9 years and 85% were in NYHA class III-IV.

Results Procedural success was achieved in 265 pts (92%). At 30 days, 34 patients died (congestive heart failure in 14, peri-procedural death in 10 and septic shock in 10). We focused on the 255 patients discharged alive after TAVI to analyze long-term outcome. Follow-up was complete in 100% of patients. During a mean follow-up of 4.1±0.2 years, 139 patients died, half of deaths being non-cardiac.

Overall 7-year survival rate was 26±9%. We identified 5 preprocedural predictive factors of late mortality in multivariate analysis: cancer (p=0.001), diabetes under insulin therapy (p=0.02), NYHA class III-IV (p=0.03), atrial fibrillation (p=0.04), higher creatinin level (p<0.0001) and 2 post-procedural factors: higher systolic PAP (p=0.02) and arrhythmias (p=0.02). Whereas conduction disorders are more frequent after TAVI (29% of cases in this series) and may often lead to pace-maker implantation, only post-TAVI arrhythmias (supraventricular in 32 patients or ventricular in 4) were predictive of late mortality. Finally, in the 116 survivors, 70% were in NYHA class I-II at last follow-up.

Conclusions At 7-year follow-up after TAVI, the survival rate was 27% and most patients have few or no symptoms. The predictive factors of late mortality emphasized the weight of comorbidities. Particular awareness is needed toward the occurrence of post-TAVI arrhythmias which identifies high-risk patients.

The author hereby declares no conflict of interest