VALVE & STRUCTURAL HEART

CRT-800.00

Safety and Efficacy of Pressure Wire Use in Hemodynamic Assessment of Paradoxical Low Flow Low Gradient Aortic Stenosis

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BACKGROUND Current guidelines discourage aortic stenosis (AS) evaluation by direct pressure measurement if echocardiography (echo) is adequate. However several studies show sizable differences between echo and catheterization (cath) lab measurements. Low flow/ low gradient (LF/LG) severe aortic stenosis (AS) with preserved EF constitutes a real challenge with no clear method to confirm the severity of AS in this group. Normal flow/ low gradient AS with preserved EF is considered as echocardiography miscalculation by guidelines. Using pressure wire for aortic stenosis assessment may offer a safe and higher quality technique to assess the severity of AS in LF/LG and NF/LG AS with preserved EF.

METHODS 297 Sequential patients with AVA $< 1cm^2$ on echocardiography underwent right and left heart cath by two operators with pressure gradients via left ventricular (St. Jude) pressure wire and ascending aorta catheter. Of these, there were 95 with high gradient (HG), 117 with LF/LG and 67 with NF/LG. Cath derived values were based on simultaneous pressure wire recording of left ventricular pressure and fluid filled pressure catheter recording of aortic pressure measured > 5 cm above the valve. Cardiac output was calculated by thermodilution.

RESULTS Of 297 patients there was 98 with HG AS, 117 with LF/LG and 67 with NF/LG. While the classification of severe AS by cath and echocardiography was concordant in 94% of HG AS patients (92/98), there was large discrepancy of this classification in patients with LF/LG and NF/LG. Severe AS was confirmed with cardiac in 77% of LF/LG patients (90/117) and 70% of those with NF/LG (47/67). No clinical strokes or TIA were observed in the 30 days after procedure in any of the patients.

CONCLUSION Invasive hemodynamic assessment of AS utilizing a pressure wire can be beneficial , safe and it may provide better discrimination to Echocardiography in identifying true severe in patients with LF/LG and NF/ LG severe AS with preserved EF.

CRT-800.01

Multicentric Experience With Lotus Valve: A Second Generation Transcatheter Aortic Valve Prosthesis Fully Repositionable And Retrievable

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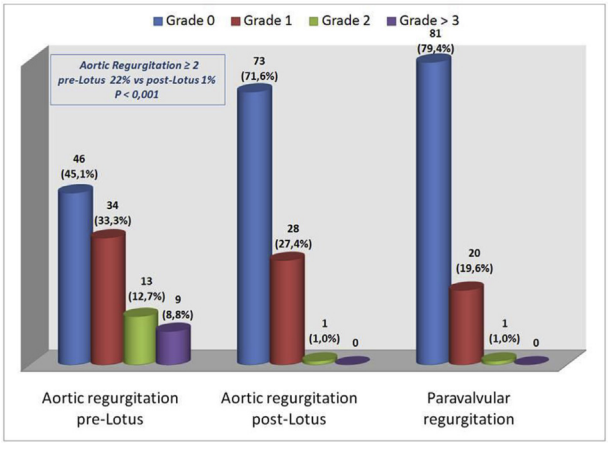
BACKGROUND Lotus™ Valve (Boston Scientific) is a second generation fully retrievable and repositionable transcatheter aortic valve prosthesis. The aim of this study is to report the initial multicentric experience with Lotus Valve System for treatment of patients with severe aortic stenosis.

METHODS Observational study that reports the results to hospital discharge of Lotus valve implantation in 5 centers in Spain and 3 in Portugal between March 2014 and April 2016.

RESULTS 102 patients (mean age 80.4 ± 6.1 years, 52.9% women and STS score 5.2% ± 3.3%) with severe symptomatic aortic stenosis (mean aortic valve area 0.66 ± 0.17 cm2, aortic gradients 74.3 / 45.6 mmHg) were included. The valve was successfully implanted in 100 patients (98%), with significant improvement in both peak and mean aortic valve gradients and with only one patient with moderate paravalvular regurgitation (figure). To hospital discharge, the mortality rate was 3,9% and the rate of stroke was 2,9% (2 cases of disabling strokes, 1 non disabling). No cases of valve embolization, ectopic valve deployment or additional valve implantation (valve-in-valve) was observed. 33 patients (32,3%) received a permanent pacemaker.

CONCLUSION Lotus Valve System is effective and safe for treating patients with severe symptomatic aortic stenosis. Particularly, high lights the low rate of periprosthetic regurgitation and absence of complications like embolization or ectopic valve deployment of the prosthesis, at the expense of a high pacemaker implant.



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Severe Predicted Patient-prosthesis Mismatch As A Predictor Of Long Term Mortality After Aortic Valve-in-valve: Insights From The Valve-in-valve International Data Registry (vivid)

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INTRODUCTION Patient-prosthesis mismatch (PPM) is a commonly neglected issue in aortic valve replacement patients, associated to several complications. These biological surgical valves eventually fail and patients may undergo valve-in-valve. We evaluate whether severe predicted PPM is a predictor of mortality in the valve-in-valve population.

METHODS Predicted PPM is derived from reference effective orifice area (EOA) values for each surgical valve size model and size divided by body surface area (BSA) (i.e. indexed EOA). Moderate PPM was defined as indexed EOA (iEOA) ≤ 0.85 cm2/m2 for body mass index (BMI) < 30 kg/m^2 or iEOA ≤ 0.7 cm^2/m^2 for BMI ≥ 30 kg/m^2. Severe PPM was defined as iEOA ≤ 0.65 cm^2/m^2 for body mass index (BMI) $<$ 30 kg/m^2 or iEOA ≤ 0.55 cm^2/m^2 for BMI ≥ 30 kg/m^2. Reference EOA values were available for Medtronic Mosaic, Medtronic Hancock II, Medtronic Mosaic, Carpentier-Edwards, Carpentier-Edwards Perimount, Carpentier-Edwards Perimount Magna, Sorin Mitroflow and St. Jude Toronto SPV. Multivariate analysis was performed to identify independent predictors of one-year mortality, including as possible variables severe predicted PPM, any predicted PPM, presence of small surgical valve (label size $\leq$ 21mm) and mechanism of failure.

RESULTS 1,023 patients with the valves above were selected from the Valve-in-Valve International Data (VIVID) Registry. Mean age was