Quality control assessment in cardiac surgery

Guillaume, L.; Schröder, E.; Bihin, B.; Michaux, I.; Dive, A.; Hanet, C.; Guédès, A.; Dangoisse, V.; Gabriel, L.; Seldrum, S.; Gérard, M.; Eucher, P.H.; Louagie, Y.; Buche, M.

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Aortic dissection in Marfan syndrome: is bicuspid aortic valve (BAV) a risk factor?

O. Milleron* (1), D. Baghdadi (2), M. Langeois (1), M. Spentchian (1), F. Arnoult (1), G. Delorme (1), G. Jondeau (1)
(1) APHP-Hôpital Bichat-Claude Bernard, CNMR Marfan, Paris, France – (2) CHU Ibn Rochd, Casablanca, Maroc
**Corresponding author: omilleron@gmail.com*

Background Bicuspid aortic valve (BAV) has been associated with aortic dilatation and risk for ascending aorta dissection (AAD) in the general population. Whether BAV increases the risk for aortic dissection in patients (pts) with Marfan syndrome (MFS) is unknown.

Purpose Evaluate the incidence of BAV in pts with MFS who presented AAD and the risk factors of AAD in this subgroup when standard care is applied.

Methods We used our database to select pts with MFS, known FBN1 mutation and experienced AAD after their first visit in our center with and without BAV.

Results After their first visit in our center, AAD occurred in 16 of the 1324 MFS pts carrying a FBN1 mutation (1.2%). Median age was 41 yo (range: 17-66 yo) and 50% were women (W). 6 pts (37.5%) died from AAD. During last visit prior to AAD, aortic diameter was:

- < 50 mm (38 to 47mm) in 5 pts (median age: 58 yo, 3 W). One AAD occurred in the post-partum period of a women taking betablocker. Family history of AAD in first-degree relative was found in 3/5. None of the patients had hypertension. All but one were taking betablocker.
- = 50 mm in 5 pts (median age: 42 yo, 2 W). One AAD occurred during pregnancy (35 weeks) with a rapid growth from 47 to 50mm in few weeks. 3 other pts were waiting for surgery. The last patient was waiting for CT because of discrepancy between TTE and MRI.
- > 50 mm in 6 pts: In 2 W (52 and 53mm) diagnosis of MFS was not made on clinical grounds, and FBN1 mutation unknown at the time of AAD. The 4 other pts refused prophylactic aortic surgery.

BAV was not present in any of these pts. BAV was present in 23 pts (1.8%) among the 1278 MFS pts carrying a FBN1 mutation free of aortic valve replacement at first visit. None of this pt experienced AAD during follow up.

Conclusion In MFS pts carrying FBN1 mutation: BAV is not more frequent (1.8%) than reported in the general population and BAV is not associated with an increased risk of AAD when standard care is applied.

The authors hereby declare no conflict of interest

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Impact on survival of the severity in aortic stenosis in initially non operated patients

K. Marcovitch, E. Schröder*, B. Bihin, B. Marchandise, S. Seldrum, M. Gérard, A. Guédès, L. Gabriel, V. Dangoisse, C. Hanet, M. Buche
CHU UCL Namur, Cardiologie, Yvoir, Belgique
**Corresponding author: uss-chu@uclouvain.be*

Background The national history of mild/moderate aortic stenosis (AS) has been previously reported in 3 studies.

Aim We sought to assess the impact of the severity of AS in a group of patients initially managed medically.

Methods A consecutive group of 399 patients with AS as assessed in our echolab (6.2.2002–22.7.2003). Patients with a previous aortic prosthesis or operated within 3 months after diagnosis of AS were excluded. Patients were classified according to AS severity:

- mild AS (AV area > 1.5-2 cm²)
- moderate AS (AV area 1-1.5 cm²)
- severe AS (AV area 0.8-0.99 cm²)
- very severe AS (AV area<0.8 cm²)

The reasons of non-intervention were either absence of severe AS or in presence of severe AS absence of symptoms, comorbidities, prohibitive OP risk or patient preference.

Results Overall survival at 1 and 5 yrs was respectively 88.9% and 64.7%, ranging from 93.6% and 72.1% for the mild AS to 72.3% and 39.3% for the severe AS.

By multivariate analysis we found 4 variables predicting long-term outcome:

- Log Euroscore OR: 1.04; 1.02 – 1.06
- Age OR: 1.04; 1.02 – 1.06
- NYHA ³ 2 OR: 1.59; 1.18 – 1.24
- Very severe AS OR: 2.3; 1.34 – 3.96

AS with AV area > 0.8 cm² had no impact on survival. The relative impact of the AS severity in addition to the clinical parameters (log Euroscore, age, NYHA, LVEJF) was assessed by the ROC model. The predictive performance was only slightly improved (by 2 – 3%) by including the AS severity.

Conclusion Survival in patients with very severe AS is reduced in comparison to patients with less severe AS. Survival in patients with less severe AS (AV area > 0.8 cm²) depends mainly on clinical characteristics, but not on degree of AS severity. There seems to be a place for randomized trials on the management of patients with less severe AS (AV area: 0.8-1 cm²).

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Quality control assessment in cardiac surgery: single center experience in aortic valve replacement by mechanical prosthesis

L. Guillaume, E. Schröder*, B. Bihin, I. Michaux, A. Dive, C. Hanet, A. Guédès, V. Dangoisse, L. Gabriel, S. Seldrum, M. Gérard, PH. Eucher, Y. Louagie, M. Buche
CHU UCL Namur, Cardiologie, Yvoir, Belgique
**Corresponding author: uss-chu@uclouvain.be*

Objectives For quality control purposes, we aimed to compare the observed event rate to the event rate according validated scores for mortality and in-hospital complications.

Material and Methods A consecutive series of 690 patients (average age 63 years) undergoing an aortic valve replacement by a mechanical prosthesis from January 1998 to December 2012. The implantation was associated with coronary artery bypass grafting in 214 patients (31,0%), BENTALL operation in 80 patients (11,6%), Buse / plasty in 14 patients (2,0%), septal myomectomy in 23 patients (3,3%), carotid endarterectomy in 15 patients (2,2%), MAZE in 9 patients (1,3%) and closure of a patent foramen ovale for 10 patients (1,4%). The short and long term outcomes were retrospectively analyzed and compared with predictive scores (the logistic EuroSCORE, 2010 EuroSCORE and STS).

Results Operative mortality observed was 4,3% versus 6,42% and 3,61% predicted by the log and 2010 EuroSCORE respectively. Postoperative complications were: myocardial infarction in 17 patients (2,5%), stroke in 12 patients (1,7%), dialysis in 25 patients (3,6%), implantation of a pacemaker in 37 patients (5,4%) and AF in 279 patients (40,4%). The observed rates of procedural complications were in accordance with the rates predicted by the STS score, except for prolonged ventilation (4,1% predicted vs 10,9%) and reoperation (4,2% predicted vs 7,4%, p<0.01). The overall survival rate (Kaplan-Meier) at 5 years was 84%. For the prediction of 1-year mortality, the log EuroSCORE offered the best ROC curve with an AUC of 0,77.

Conclusions The observed mortality rate is similar to the values predicted by the log and 2010 EuroSCORE. The observed rates of procedural complications were in accordance with the rates predicted by the STS score, except for prolonged ventilation and reoperation where much lower event rates were observed in our series.

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