

| | Bridge PABV (n=23) | PABV alone (n=18) | Primary TAVI or AVR (n=140) | Medical treatment (n=72) |
|-----------------------|--------------------|-------------------|-----------------------------|--------------------------|
| Age (years) | 79±8 | 83±8 | 82±8 | 83±9 |
| EuroSCORE (%) | 35±21 | 39±24 | 25±12 | 31±17 |
| Hospital survival (%) | 100 | 67 | 88 | 86 |
| One-year survival (%) | 94±5 | 33±11 | 74±4 | 30±6 |

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Severe asymptomatic aortic valve stenosis. Value of the recently proposed parameters: deformation imaging, exercise and ventriculo arterial impedance.

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Background: Ventriculo-arterial impedance (ZVA) and Exercise echocardiography are new parameters proposed to best characterize patients with aortic valve stenosis (AS).

Purpose: we sought to compare the independent value of these new indices.

Methods: we analyzed these new indices in a large prospective series of 207 consecutive patients followed for a severe asymptomatic AS.

Results: The correlations between conventional indices of aortic valve severity, ZVA, and exercise stress echocardiography results were weak. We, then, can distinguish 4 distinct categories of AS patients according to ZVA and according to the result of the exercise stress echocardiography (figure).

Conclusion: ZVA as well as Exercise echocardiography can help but have limitations in the decision making in regard to the management of severe asymptomatic AS. Nevertheless, the decision to operate or not a supposed asymptomatic patient is still multiparametric.

| | ZVA>5 | ZVA<5 |
|-----------------|--|--|
| EX ECHO+ | Syst BP 146±21 ZVA 7.8±2.4 Ex ZVA 4.7±1.9 LV EF 59±10 AEA 0.9±0.2 Mean PG 42±14 Ex Mean OG 68±8 LA area 18.6±5.8 E/e' 9.5±2.9 Ex E/e' 11.3±6.2 Radial 2DS 34±17 Circum f 2DS -14.8±5.6 Long 2DS -15±3 N=76 | Syst BP 139±16 ZVA 4.2±0.6 Ex ZVA 4±1.2 LV EF 61±9 AEA 0.9±0.2 Mean PG 45±18 Ex Mean PG 62±8 LA Area 20±10 E/e' 11±3 Ex E/e' 11±5 Radial 2DS 28±7 Circum f 2DS -13±4.5 Long 2DS -15±3 N=79 |
| EX ECHO- | Syst BP 144±20 ZVA 7.0±1.6 Ex ZVA 5.1±2.3 LV EF 67±8 AEA 0.8±0.2 Mean PG 48±17 Ex Mean OG 51±19 LA area 19±5.1 E/e' 11.7±5.2 Ex E/e' 14±7.7 Radial 2DS 33±12 Circum f 2DS -14±4 Long 2DS -16±5 N=29 | Syst BP 142±20 ZVA 4.0±0.7 Ex ZVA 4.4±1.6 LV EF 68±8 AEA 0.9±0.2 Mean PG 42±14 Ex Mean G 51±18 LA 22±5.7 E/e' 11±3 Ex E/e' 11±5 Radial 2DS 28±7 Circum f 2DS -13±5 Long 2DS -15±3 N=23 |

Characteristics of the patients

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Percutaneous femoral implantation of aortic valve prosthesis without surgical cutdown. A single center experience.

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Purpose: Femoral transcatheter aortic valve implantation (TAVI) is usually done by surgical cut down under general anesthesia. Complete percutaneous approach has become widely accepted in endovascular management of aortic disease, and we have decided to apply this technique for TAVI. We aimed to evaluate the impact of the sheath size on safety and efficacy of this technique.

Method: The study cohort included 64 consecutive patients who underwent femoral approach using Prostar XL device at our institution between Mar 2008 and Feb 2010. The cohort was divided into two groups: group 1, 18 or 19 Fr sheath (1 Prostar XL device) and group 2, 22 or 24Fr (2 Prostar XL). The iliac and femoral angiogram was obtained before insertion and after removal of the sheath using contralateral approach. Device success was defined as immediate hemostasis without surgery or death related to access site during hospital stay.

Results: Clinical characteristics were similar in both groups (83.6±5.7 years, male gender 50% and logistic Euroscore 25.3±11.0%) besides higher rate of hypertension (81.0% vs 56.1%; p=0.03) in group 1.

In group 1, Corevalve was used in 14 cases and Edwards valve in 9 cases. In group 2, 22 Fr sheath was used in 22 cases and 24Fr in 19.

The angiogram showed smaller femoral artery diameter in group 1 (7.7±1.2 vs 9.0±0.9mm; p=0.001 and common iliac artery 9.4±1.4 vs 11.5±1.8mm; p=0.001), a lower calcium score (0.6±0.8 vs 1.1±0.7; p=0.034) and tortuosity score (0.6±0.7 vs 1.2±0.7; p=0.001). Device success was achieved in 100% in group 1 and 95.1% in group 2 (p=ns). The rate of iliac artery perforation or rupture was lower in group 1 (0% vs 9.8%; p=0.044). Death due to access site complication was observed only in 1 case in group 2 (p=ns).

Conclusion: Thanks to the development of lower profile devices, percutaneous approach for femoral arterial access is emerging as a promising method for TAVI and will decrease the need for general anesthesia in this high risk patients.

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Prothetic abscess complicating Infective endocarditis

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The cardiac abscess formation is appraised to 20-30% during the infectious endocarditis (IE). It is more frequent during prosthesis endocarditis and it can reach 60%. The prognosis is generally reserved. Objective To determine echocardiographic, bacteriological and evolutive features of prothetic IE complicated of abscess.

Retrospective study including 51 patients having certain or probable IE according to Duke criterias between 2002 and 2005. At 9 patients (17,64%) the endocarditis was complicated of prothetic abscess. It was about 6 men and 3 women with a middle age of 39 ±years. IE was late IE in 5 cases. Clinical and biological infectious syndrome was constant. Isolated germs were staphylococcus aureus in 2 cases, GRAM négatif Bacillus in 2 cases. Culture negative endocarditis were noted in 5 cases. Brucellosis serology was positive at one patient. Prothetic abscess was diagnosed by transthoracic echocardiography (TTE) at 2 patients and by transesophageal echocardiography (TEE) at all patients.

The abscess was localized on the aortic prosthesis at 5 patients, mitral prosthesis at 3 patients and mitroaortic prosthesis at one patient. TEE identified annular abscess at 2 patients and a myocardial abscess at 1 patient. Secondary septic localizations were noted at 6 patients: 4 cerebral abscesses, 2 splenic localization, a renal localization and an articular localization. High degree atrioventricular blocks were observed at 3 patients. The recourse to the surgery

was frequent (7 patient /9 patient). It was an emergent surgery at 2 patients because of a heart failure. For the others, the indication for surgery was medical failure treatment at a mean delay of 19 days. The evolution was fatal at 5 patients. and the evolution was favorable at the others.

Prosthetic endocarditis complicated of abscess are serious requiring frequently a prosthetic replacement, a very high risk surgery. TEE must be systematic at all patients carrier of prosthesis if they have infectious syndrome in order to carry the early diagnosis of IE and to avoid abscess formation.

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Predictive factors of mid-term mortality after transcatheter aortic valve implantation

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Purpose: Growing experience with transcatheter aortic valve implantation (TAVI) enables predictive factors of mid-term results to be identified.

Methods: Between October 2006 and January 2010, 145 patients (pts) underwent TAVI because of symptomatic, severe aortic stenosis (mean valve area $0.70 \pm 0.18 \text{ cm}^2$). TAVI used a transvascular (TV) approach in 96 cases and a transapical (TA) approach in 49. Prostheses were Edwards Sapien in 131 pts and Medtronic Corevalve in 14 pts. Follow-up was complete, median follow-up was 6 months. Predictive factors of 2-year mortality were selected among 16 variables using a univariate Cox model and then a Cox multivariate model including significant variables in univariate analysis and risk scores which were kept in the model. The effect of the learning curve was assessed by comparing the first 25 procedures with the subsequent 120 procedures.

Results: Mean age was 81 ± 9 years, 77 pts (53%) were male, and 37 pts (26%) had had coronary artery bypass grafting (CABG). Mean Euroscore was $27 \pm 15\%$ and mean Charlson comorbidity index was 3.7 ± 2.5 . Thirty-day survival was 88%. Two-year survival was $68 \pm 6\%$. The 3 significant predictive factors of 2-year mortality in multivariate analysis were TA approach, absence of prior CABG, and procedures within the first 25 cases (Table). Risk scores were not significantly associated with 2-year mortality.

Conclusion: The identification of predictive factors of mid-term mortality after TAVI 1) Shows the impact of training 2) Suggests that patients with prior CABG and treated using the TV approach derive the greatest benefit 3) Further illustrates the limitations of conventional risk scores in predicting the results of TAVI.

Table: Predictive factors of 2-year mortality in multivariate analysis

| | Hazard ratio | 95% CI | p |
|----------------------------|--------------|---------------|-------|
| TA vs. TF approach | 3.6 | [1.6-7.9] | 0.002 |
| Early vs. late experience | 2.8 | [1.2-6.4] | 0.01 |
| Absence of prior CABG | 2.9 | [1.1-7.8] | 0.03 |
| Euroscore | 1.003 | [0.977-1.029] | 0.84 |
| Charlson comorbidity index | 1.03 | [0.88-1.19] | 0.72 |

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Epidemiology of valvular heart disease in a tunisian center

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Introduction: Valvular heart diseases (VHD) remain frequent, their prevalence is about 2.5% in USA. The etiology of valvular heart disease has changed dramatically in the last five decades. In the western world, the significant reduction of acute rheumatic fever and its sequelae, and the recognition of non-rheumatic causes of valvular disease are responsible for the metamorphosis in the etiology of valvular disorders.

The aim of this work is to study the epidemiological profile of the patients undergoing valvular surgery in a Tunisian center of cardiology.

Methods: A retrospective study involving the 101 last patients hospitalized in our service and proposed for valvular surgery.

Results: Patients aged 24-85 years, mean age is 56.5 years, male:female = 0.9. Before surgery mean LVEF is 60 ± 13 . 10% of the patients were operated with left ventricular dysfunction (LVEF < 40%). A history of rheumatic fever was present in 60, 8% of rheumatic valvular disease. Arterial hypertension, diabetes mellitus and smoking are respectively present in 29.7%, 21.8% and 27.7% of the patients.

Etiology of VHD: rheumatic: 50.5% and degenerative : 27.7%. A preoperative coronary angiography was performed in 63, 4% of the patients and was normal in 76.6 % of the cases. CAD and VHD were associated in 14.9%. Mitral, aortic and double valve replacement were respectively performed in 38.7% , 35.4% and 18.7% of the cases. 5.29% of the implanted valves were bioprosthesis. 12.5% of the patients underwent coronary artery bypass graft in addition to the valvular surgery. In 16.8% of the cases it was a redo surgery.

Conclusion: Contemporary epidemiological data show a rise of the degenerative etiology and associated coronary artery disease. Surgery offers good results for patients with significant valvular heart disease. Valve replacement and repair are the main surgical options. Older patients and redo procedures are increasingly frequent.

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The infectious endocarditis with aortic localization. A surgical emergency

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Introduction: The course of aortic post endocarditic incapacity is unpredictable. It requires a particular management and an early or urgent surgery because of the subsequent serious complications. The aim of our retrospective study is to review the epidemiological and clinical features and to emphasize on the early of this clinical entity.

Material and method: Forty seven patients were admitted in our heart department for infectious endocardite (IE) with isolated aortic localization. Patients with other localisations of IE were withdrawn. Patients were separated in two groups according to availability of the cardiac surgery in our institution.
-A first group of 22 patients hospitalized between 1989 and 1995 where cardiac surgery was not available and
- The second group of 25 patients hospitalized between 1997 and 2009 where cardiac surgery was available
The IE diagnosis was made according to the modified criteria DUCKE.

Results: The average of age was 32 ± 12 years (extremes 16 - 67 years) with 77 % of males . The previous cardiac state is documented in 45 % of the cases. Rheumatoid arthritis is found in 86 % of the cases. An etiology was found in 43% of cases, 89 % out of them had dental etiology . Vegetations were found in 100 % of the cases at the echocardiographic exam. The left ventricle is of normal size or dilated. DOPPLER exam showed the aortic leak were of grade III or IV in all cases. Bloodcultures were positive in 27 % in the 1st group and 60 % in the second. A negative coagulase staphylococcus was found in 71 % of the cases.

The course of the disease of the 51 % of the patients with left ventricular impairment and the 11 % of the cerebral embolism was the death. Although mortality is decreasing (77 % in the 1st group and 48 % in the second) , this mortality remains high in our population.

Conclusion: Strong mortality is the burden of aortic localization. If in developed countries, it is below 30 % due to early surgery, much remains to make in emergent countries.