

Journal Club

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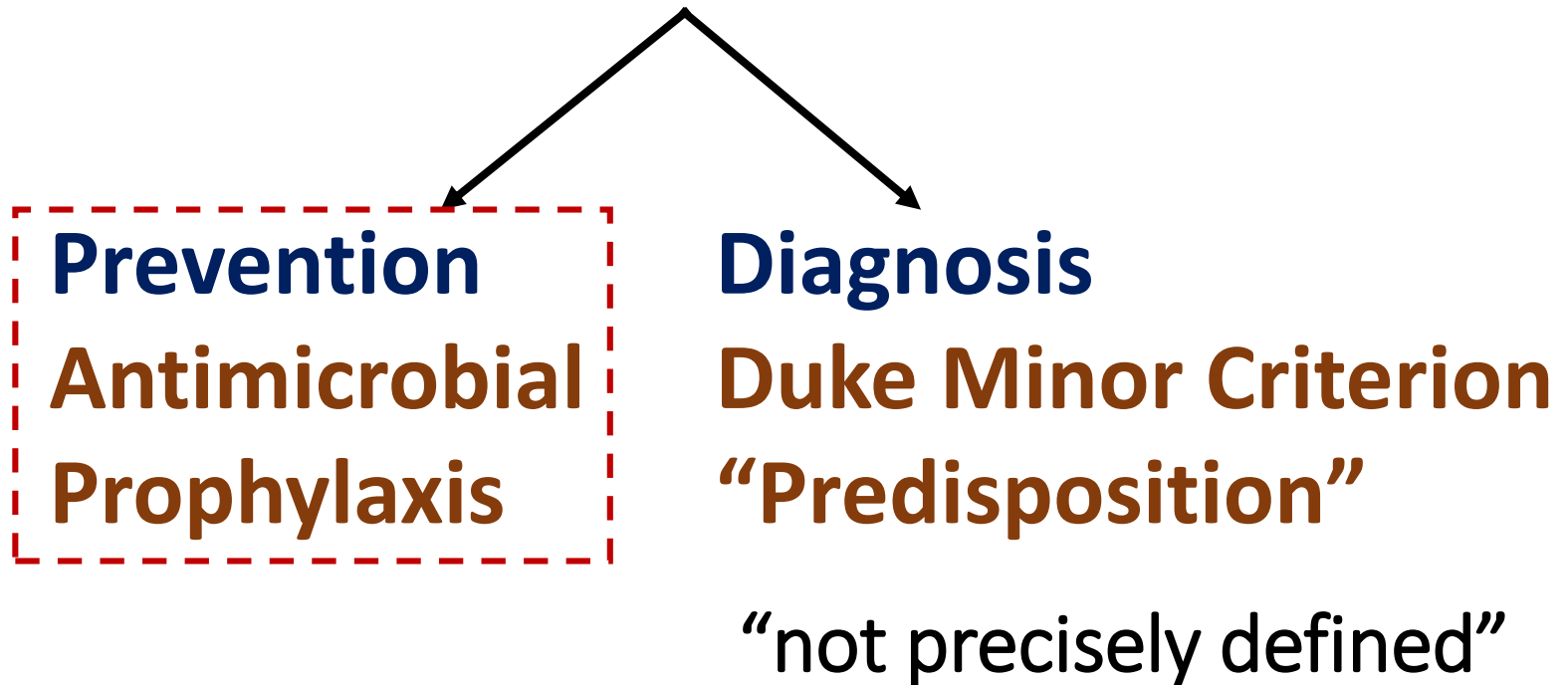
Infective Endocarditis in Patients With Bicuspid Aortic Valve or Mitral Valve Prolapse

9 Juli 2018

P. Sendi

Risk for Infective Endocarditis

Cardiac Abnormalities



endocarditis prophylaxis recommended

high-risk-patients

prosthetic cardiac valves, including bioprosthetic and homograft valves

previous infectious endocarditis

unoperated complex cyanotic congenital heart disease²

surgically constructed systemic pulmonary shunts or conduits

moderate-risk patients

operated complex cyanotic heart disease²

other congenital cardiac malformations (except for those specified in the next column)

acquired valve dysfunction³

hypertrophic obstructive cardiomyopathy

mitral valve prolapse with significant valve regurgitation and/or thickened valve leaflets

ARTICLES

Prevention of Bacterial Endocarditis

Recommendations by the American Heart Association

Adnan S. Dajani, Kathryn A. Taubert, Walter Wilson, Ann F. Bolger, Arnold Bayer, Patricia Ferrieri, Michael H. Gewitz, Stanford T. Shulman, Soraya Nouri, Jane W. Newburger, Cecilia Hutto, Thomas J. Pallasch, Tommy W. Gage, Matthew E. Levison, Georges Peter, Gregory Zuccaro

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Circulation. 1997;96:358-366

Originally published July 1, 1997

Moderate Risk

Individuals with certain other underlying cardiac defects are at moderate risk for severe infection.^{2 3 4} Congenital cardiac conditions listed in the moderate-risk category include the following uncorrected conditions: patent ductus arteriosus, ventricular septal defect, primum atrial septal defect, coarctation of the aorta, and **bicuspid aortic valve**. Acquired valvar dysfunction (eg, due to rheumatic heart disease or collagen vascular disease) and hypertrophic cardiomyopathy are also moderate-risk conditions.

Mitral valve prolapse (MVP) is common, and the need for prophylaxis for this condition is controversial. Only a small percentage of patients with documented MVP develop complications at any age.^{5 6 7} Mitral valve prolapse represents a spectrum of valvular changes and clinical behavior.^{5 6 7} In view of the controversy surrounding the need for prophylaxis of the individual patient with MVP, a detailed description of the spectrum of MVP is warranted.

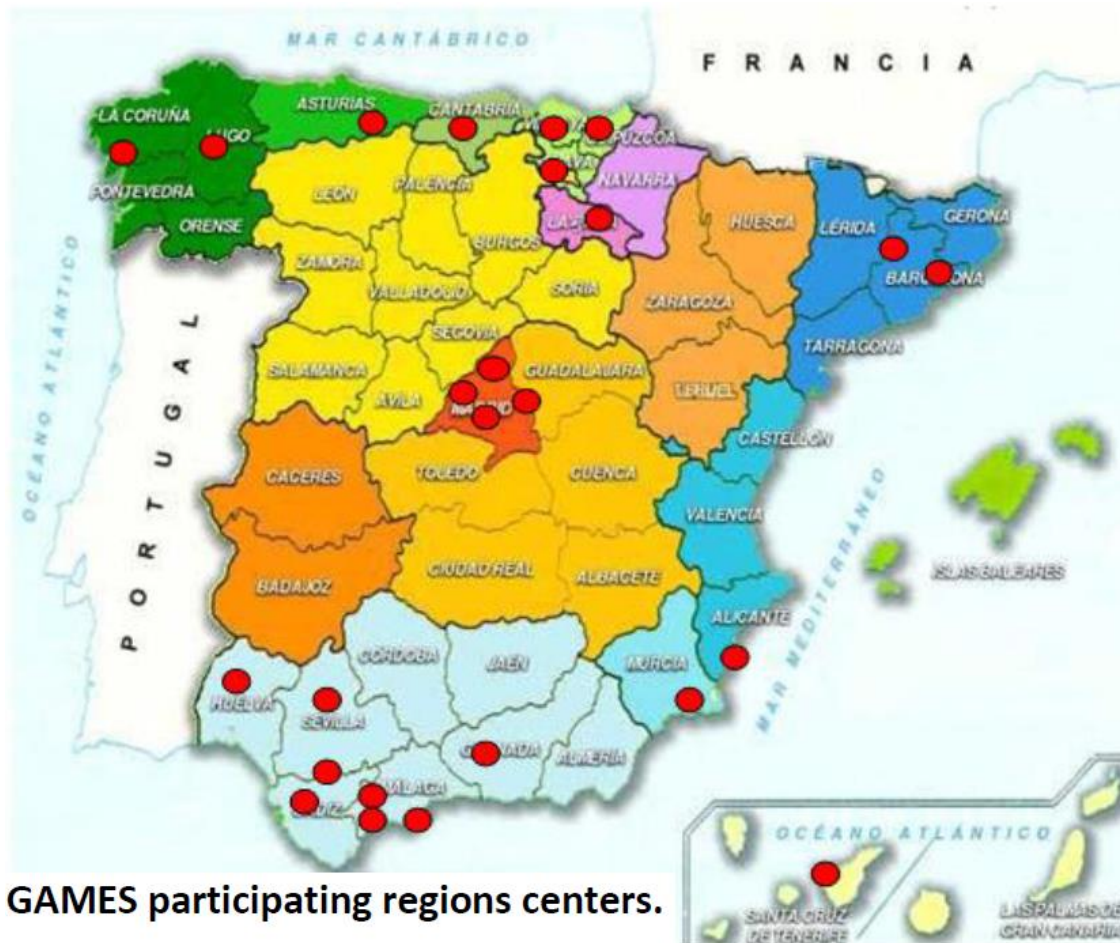
Risk for IE in patients with MVP

First author of the study	Years patients included	Study method	Number of patients with MV IE and number of patients with MVP	Number of controls and number of controls with MVP	Odds Ratio (95% Confidence Interval [CI]).
Clemens ³	1976 - 1980	case-control	51 patients with MV IE 13 patients with MVP	153 controls without IE 10 controls with MVP	8.2 (2.4 – 28.4)
Devereux ¹⁵	1980 - 1983	case-control	67 patients with MV IE 11 patients with MVP	196 controls (population control group) 8 controls with MVP 2146 controls (clinical control group) 84 controls with MVP	4.6 (2.0 – 7.2) 6.7 (1.96 – 22.9) [†] 4.8 (2.0 – 7.2) 6.7 (1.96 – 22.9) [†]
Danchin ¹⁴	1981 - 1986	case-control	48 patients with MV IE 9 patients with MVP	96 controls 6 controls with MVP	3.5 (1.1 – 10.5)
Strom ¹⁹	1988 - 1990	population-based, case-control*	273 patients with IE 248 patients with native IE [‡] 52 patients with MVP	273 controls [§] 6 controls with MVP	19.4 (6.4 – 58.4)
MacMahon ¹²	1976 - 1984	case-control**	136 patients with IE [‡] 19 patients with MVP [‡] 17 patients with MVP and murmurs	144 controls [°] 57 controls with MVP 27 controls with MVP and murmurs	13.0 (2.1 – 79.0) [*]

Herzfehler, die eine antibiotische Endokarditis-Prophylaxe benötigen

1. Patienten mit Klappenersatz
(mechanische oder biologische Prothesen)
2. Patienten nach durchgemachter Endokarditis
3. Patienten mit
 - a. unkorrigierten zyanotischen Vitien sowie palliativem aortopulmonalem Shunt oder Conduit
 - b. vollständig korrigierten Vitien mit implantiertem Fremdmaterial während den ersten 6 Monaten nach chirurgischer oder perkutaner Implantation
 - c. korrigierten Vitien mit Residualdefekten an oder nahe bei prothetischen Patches oder Prothesen (Verhinderung der Endothelialisierung)
 - d. unkorrigierten nicht zyanotischen Vitien mit turbulentem Fluss (ausser Vorhofseptumdefekt vom Sekundumtyp)
4. Patienten nach Herztransplantation mit einer neu aufgetretenen Valvulopathie



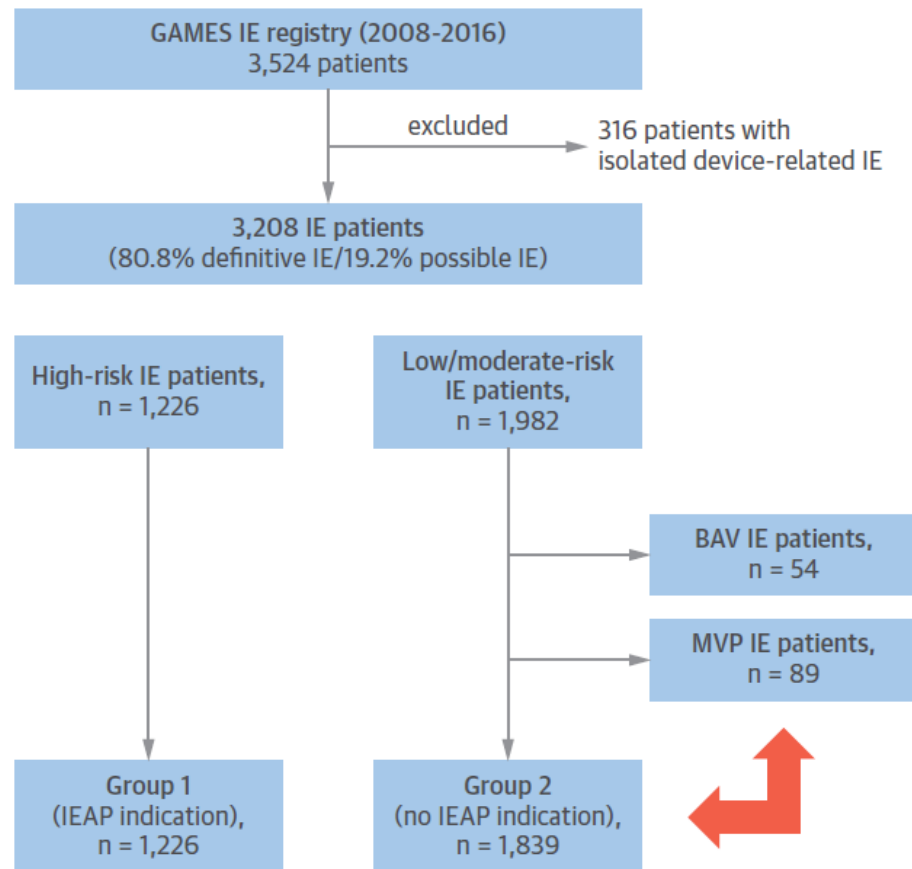


GAMES participating regions centers.

The Spanish collaboration on endocarditis (GAMES) – Enrolment 2008
 In this study – 31 centers

AIM

- To describe the clinical + microbiological features of BAV and MVP with IE.
- To compare these features with those patients with and without IEAP.



To describe the clinical + microbiological features of **54 patients** with **BAV** and IE.

- men = 43; 79.6%
- median age 43 years (IQR 36 – 55)
- low rate of comorbidity (DM, AT, DysL, AF, CKD, Hepatic, ImS, etc.)
- 35 (64.8%) moderate or severe valve dysfunction.
- 10 (18.5%) concomitant involvement of other valve.
- 42.6% microorganism belonging to the oral flora
35.2% viridans group streptococci
- 14.8% clinician postulated oral cavity as source of infection.

	BAV (n = 54)	MVP (n = 89)	High-Risk Group (n = 1,226)	Low/ Moderate-Risk Group (n = 1,839)	BAV vs. High-Risk Group p Value	BAV vs. Low/ Moderate-Risk Group p Value	MVP vs. High-Risk Group p Value	MVP vs. Low/ Moderate-Risk Group p Value
Admission, days	33 (18-50)	32 (19-45)	38 (20-54)	36 (22-51)	0.40	0.37	0.23	0.18
Heart failure	22 (40.7)	31 (34.8)	473 (38.5)	826 (45.0)	0.80	0.64	0.26	0.06
Cardiac complication*	27 (50.0)	42 (47.2)	549 (44.8)	563 (30.6)	0.53	<0.01	0.74	<0.01
Type of cardiac complication					–	–	–	–
Abscess	12 (22.2)	6 (6.7)	317 (25.9)	188 (10.2)				
Fistula	8 (14.8)	–	53 (4.3)	24 (1.3)				
Perforation	17 (31.5)	33 (37.1)	54 (4.4)	355 (19.3)				
Pseudoaneurysm	5 (9.3)	3 (3.4)	97 (7.9)	73 (4.0)				
Prosthetic dehiscence	–	–	259 (23.5)	–				

Surgery: 75.9% / 68%
Mortality: 5.6%

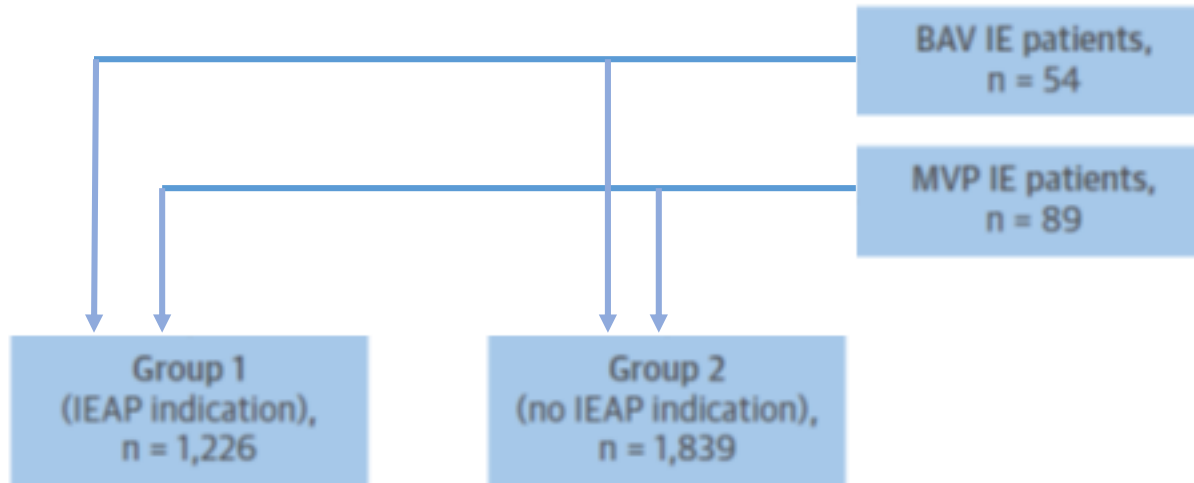
To describe the clinical + microbiological features of **89 patients** with **MVP** and IE.

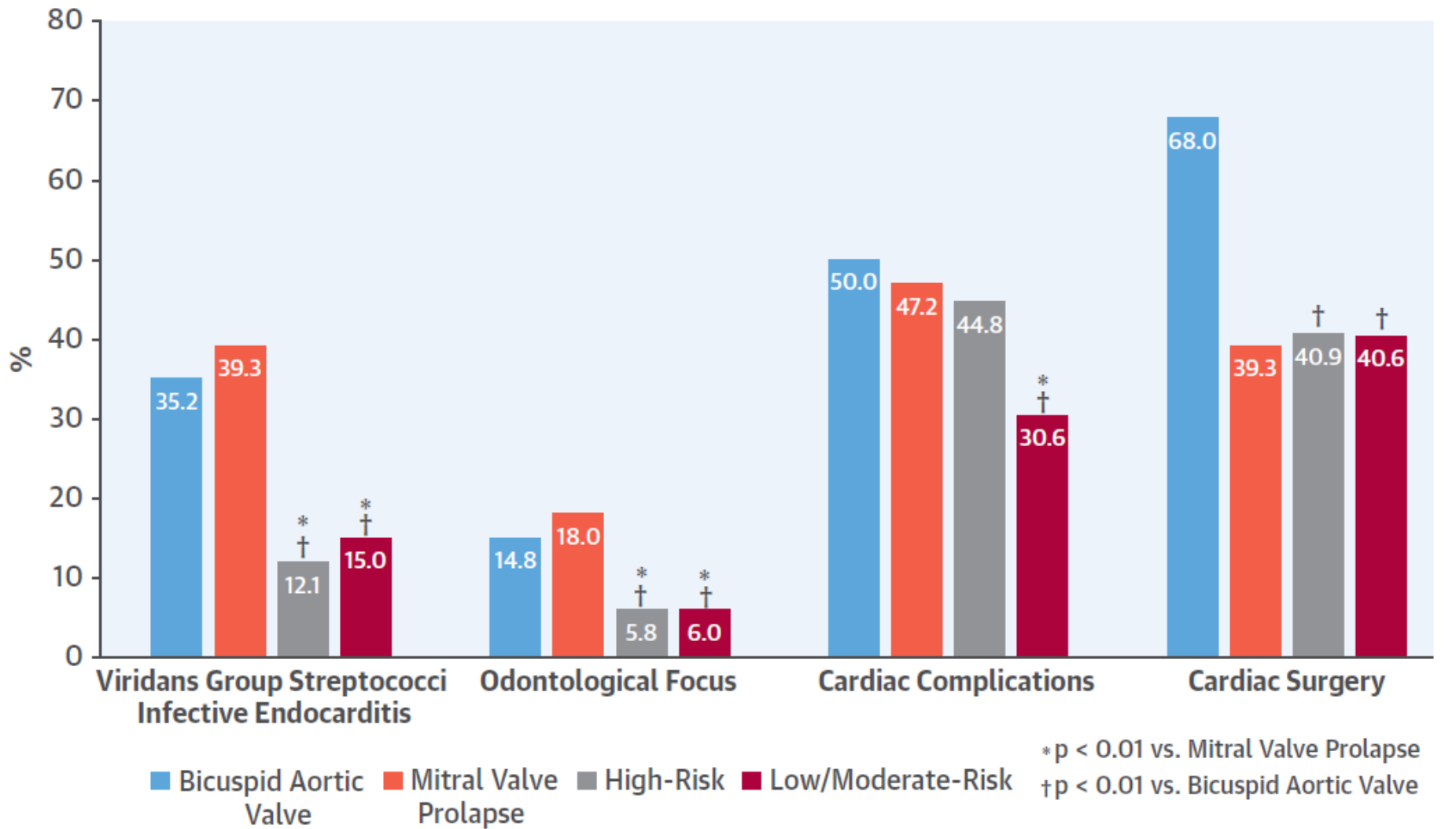
- men = 60; 67.4%
- median age 63 years (IQR 45 – 71)
- 50 (56%) moderate or severe valve dysfunction.
- 46.1% microorganism belonging to the oral flora
- 39.3% viridans group streptococci
- 18% clinician postulated oral cavity as source of infection.

	BAV (n = 54)	MVP (n = 89)	High-Risk Group (n = 1,226)	Low/ Moderate-Risk Group (n = 1,839)	BAV vs. High-Risk Group p Value	BAV vs. Low/ Moderate-Risk Group p Value	MVP vs. High-Risk Group p Value	MVP vs. Low/ Moderate-Risk Group p Value
Admission, days	33 (18-50)	32 (19-45)	38 (20-54)	36 (22-51)	0.40	0.37	0.23	0.18
Heart failure	22 (40.7)	31 (34.8)	473 (38.5)	826 (45.0)	0.80	0.64	0.26	0.06
Cardiac complication*	27 (50.0)	42 (47.2)	549 (44.8)	563 (30.6)	0.53	<0.01	0.74	<0.01
Type of cardiac complication					–	–	–	–
Abscess	12 (22.2)	6 (6.7)	317 (25.9)	188 (10.2)				
Fistula	8 (14.8)	–	53 (4.3)	24 (1.3)				
Perforation	17 (31.5)	33 (37.1)	54 (4.4)	355 (19.3)				
Pseudoaneurysm	5 (9.3)	3 (3.4)	97 (7.9)	73 (4.0)				
Prosthetic dehiscence	–	–	259 (23.5)	–				

Surgery: 62.9% / 39.3%
Mortality: 10%

To compare these features with those patients
with and without IEAP





	BAV (n = 54)	MVP (n = 89)	High-Risk Group (n = 1,226)	Low/ Moderate-Risk Group (n = 1,839)	BAV vs. High-Risk Group p Value	BAV vs. Low/ Moderate-Risk Group p Value	MVP vs. High-Risk Group p Value	MVP vs. Low/ Moderate-Risk Group p Value
In-hospital mortality	3 (5.6)	9 (10.1)	356 (29.0)	521 (28.3)	<0.01	<0.01	<0.01	<0.01

Propensity score analysis – matching for age, Carlson index, nosolIE, staphIE, logEuroScore:

No differences in mortality

Diskussion

- + clinical features of patients with MVP/BAV and IE
 - young, male, few comorbidities
 - VGS, high intra-cardiac complication rate
 - low mortality
- Information regarding IEAP lacking
- Number of MVP and BAV without IE unknown
- Absolutely relatively small number

Risk for Infective Endocarditis

Cardiac Abnormalities

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graph TD; A[Cardiac Abnormalities] --> B[Prevention]; A --> C[Diagnosis];
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Prevention

**Antimicrobial
Prophylaxis**

Diagnosis

**Duke Minor Criterion
“Predisposition”**

MVP

BAV