

Current trend of Interventional Cardiology for Congenital Heart Diseases in Japan; JPIC questionnaire survey

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COI Disclosure

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Introduction

Since 1998, the Japanese Society of Pediatric Interventional Cardiology (JPIC) has collected the number of patients, outcome and complications in transcatheter treatment for congenital heart diseases by questionnaire survey.

Method-1

We analyzed the number of patients and adverse events of 9 major procedures in this survey from 2000, when the method of the questionnaire had been established, to 2013;

- Balloon pulmonary and aortic valvuloplasty (PTPV, PTAV)
 - Pulmonary atresia with intact ventricular septum (PA IVS) and Critical PS (cPS)
 - PS valvuloplasty(PSv)
 - AS valvuloplasty (ASv)
 - Critical AS (cAS)
- Balloon angioplasty for pulmonary stenosis and aortic coarctation (PS PTA, CoA PTA)
- Stenting for pulmonary stenosis and aortic coarctation (PS Stent, CoA Stent)
- Embolization (emboli) for abnormal vessels other than patent ductus arteriosus (PDA)
- Percutaneous closure of PDA (PDA closure)
- Percutaneous closure of atrial septal defect (ASD closure)

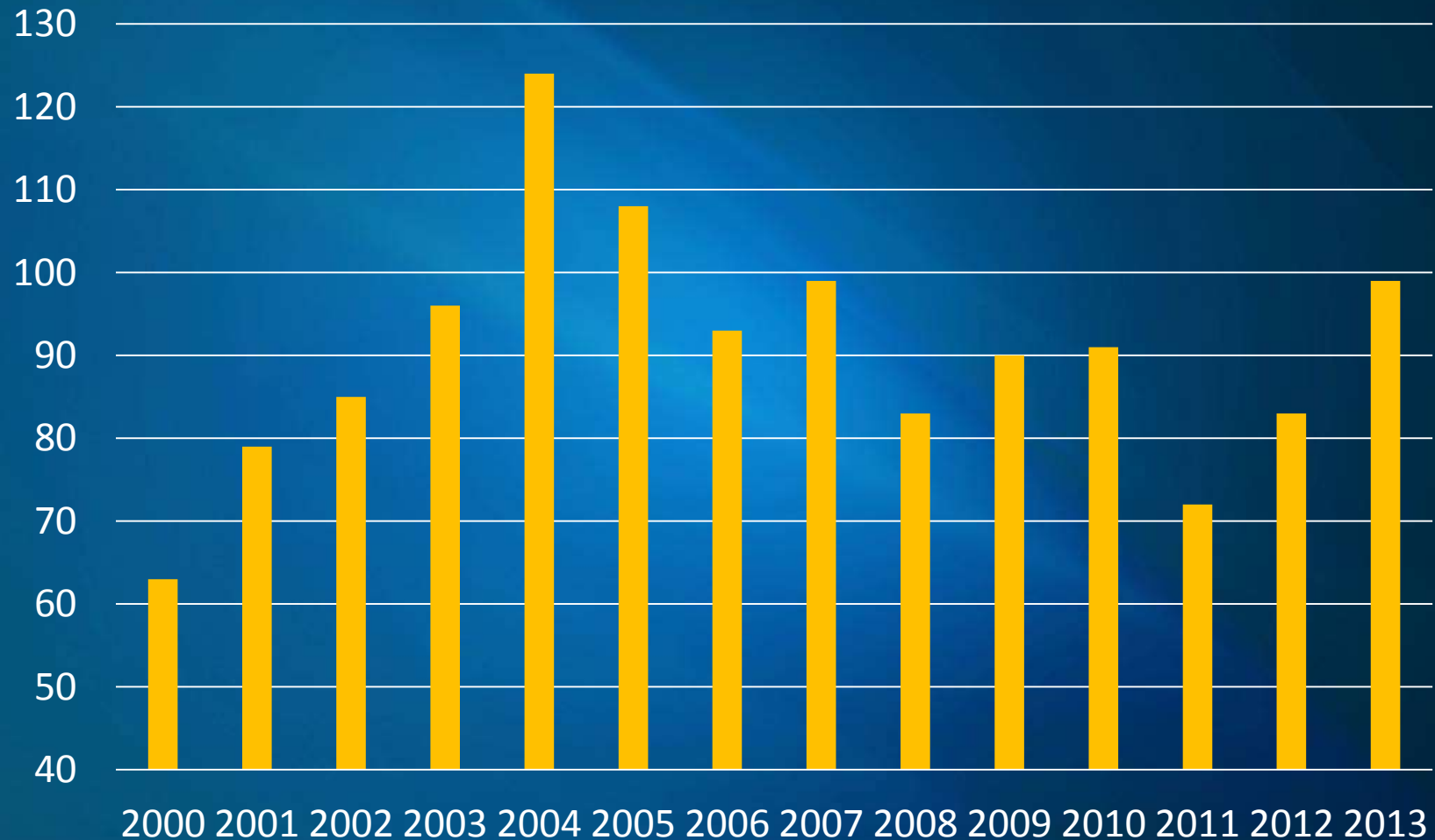
Method-2

- Adverse event (AE) was defined as occurrence of any of the following:

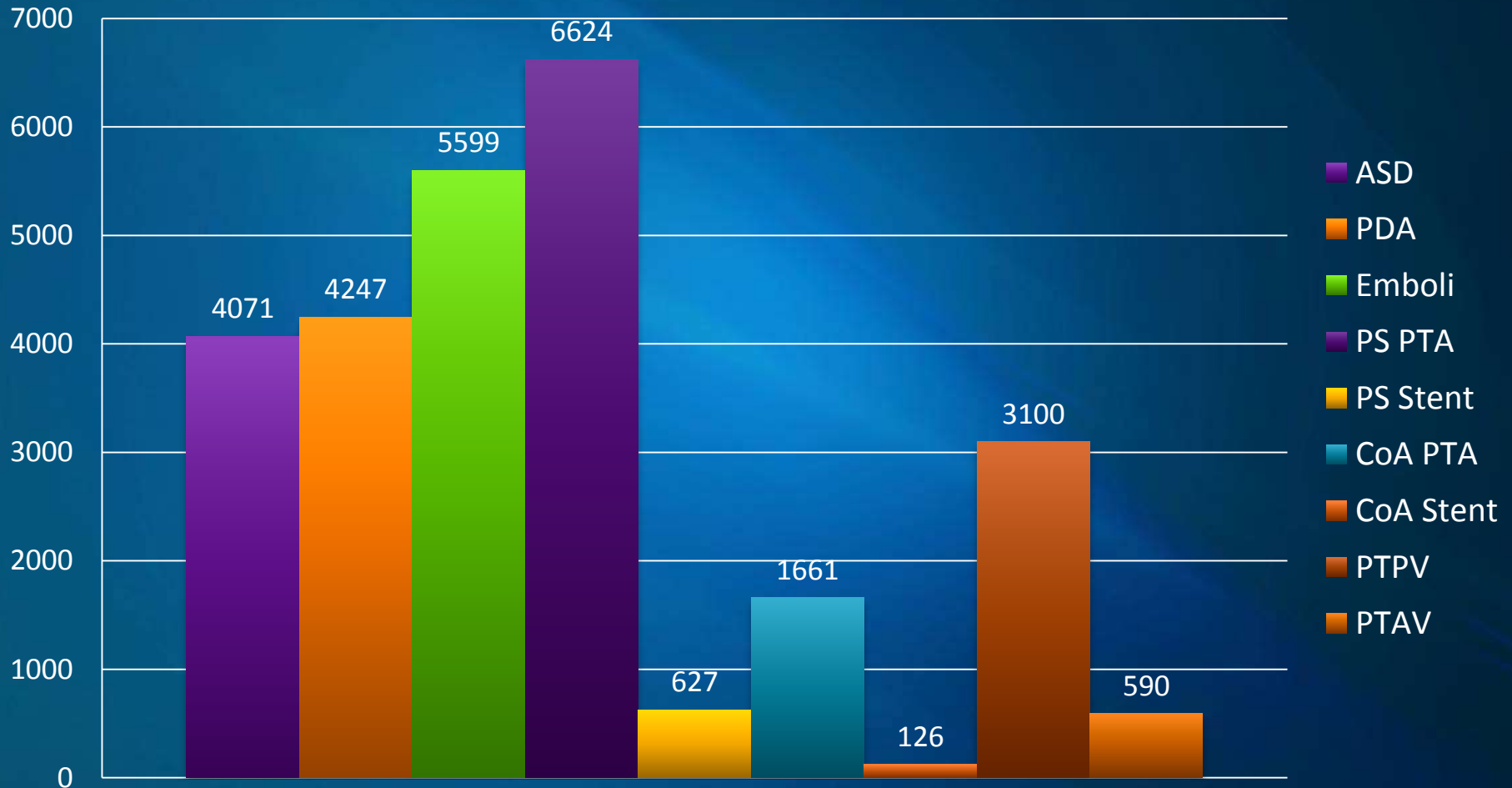
cardiac arrest; arrhythmia requiring treatment: severe valve regurgitation; tamponade; embolic stroke; event requiring mechanical cardiac support; bleeding event; unplanned surgery; pseudoaneurysm; exposure to radiation longer than 2 hours

- Unplanned surgery, death, and complications of central nervous system were defined as severe AE.
- Statistical analysis was done by chi-square test. P value < 0.05 was considered as significant.

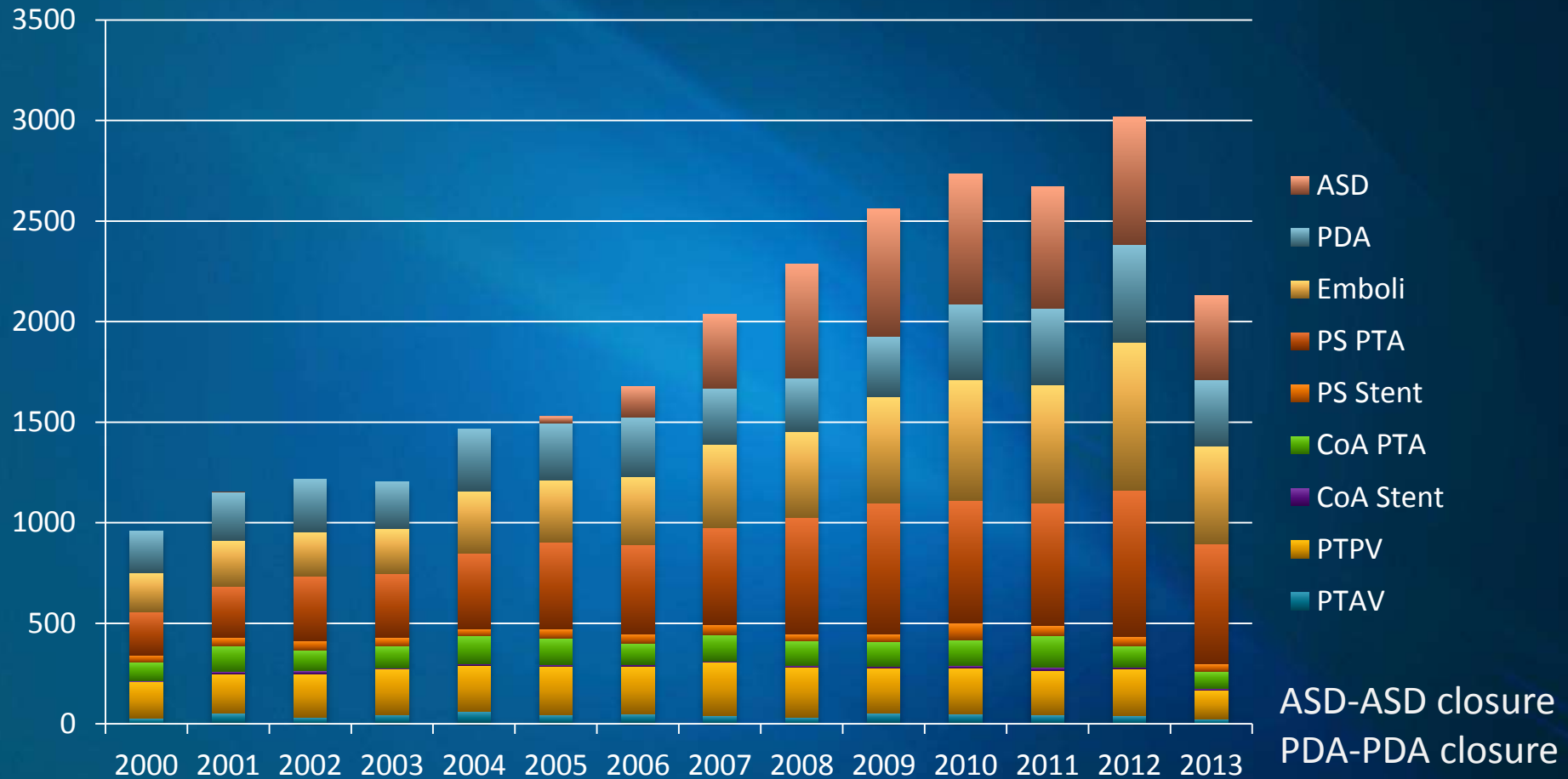
The Number of Responders



Total Number of Procedures



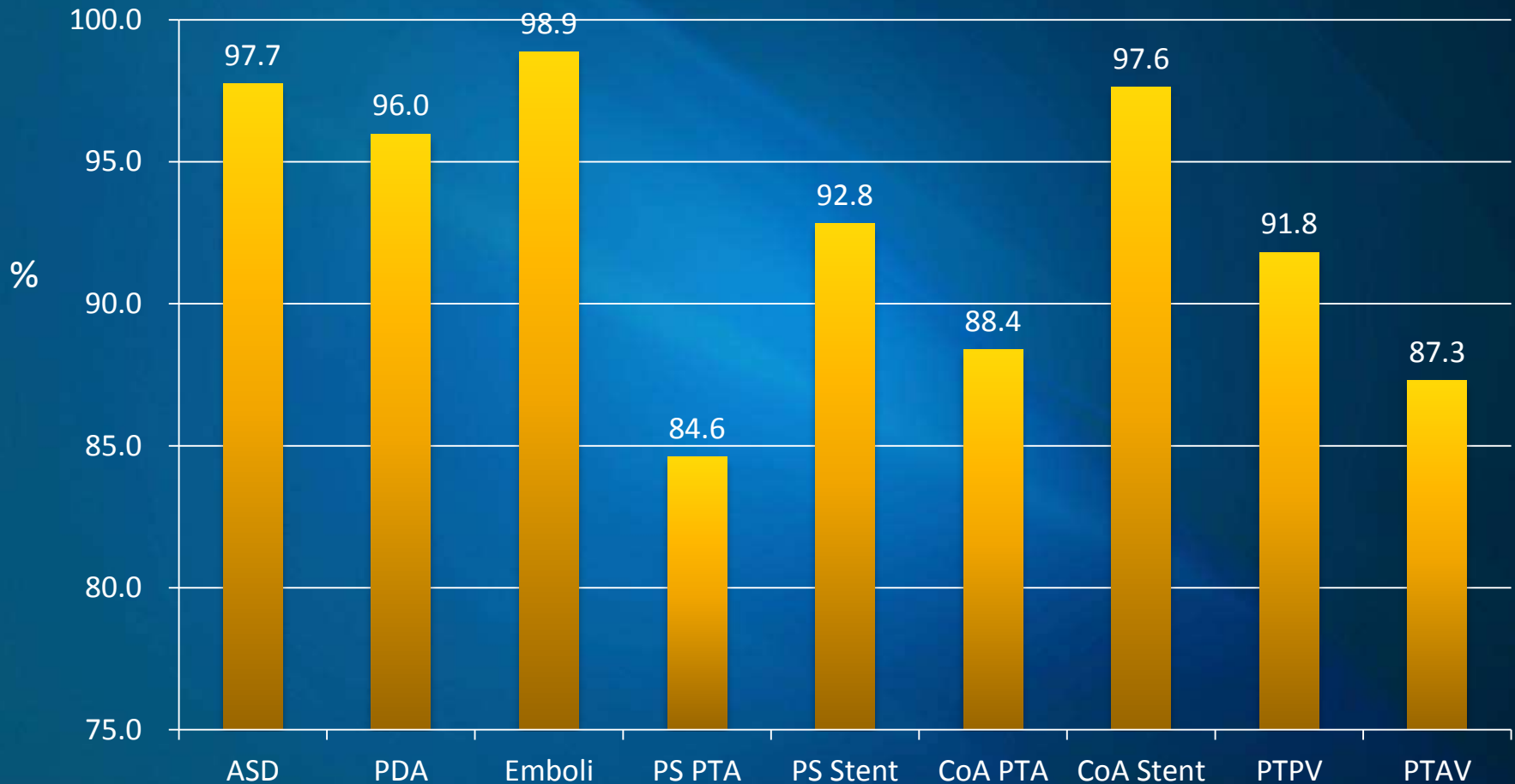
Trend in Number of Procedures



The number of responders in the investigation periods was 63-94 (90 ± 15 , mean \pm SD)

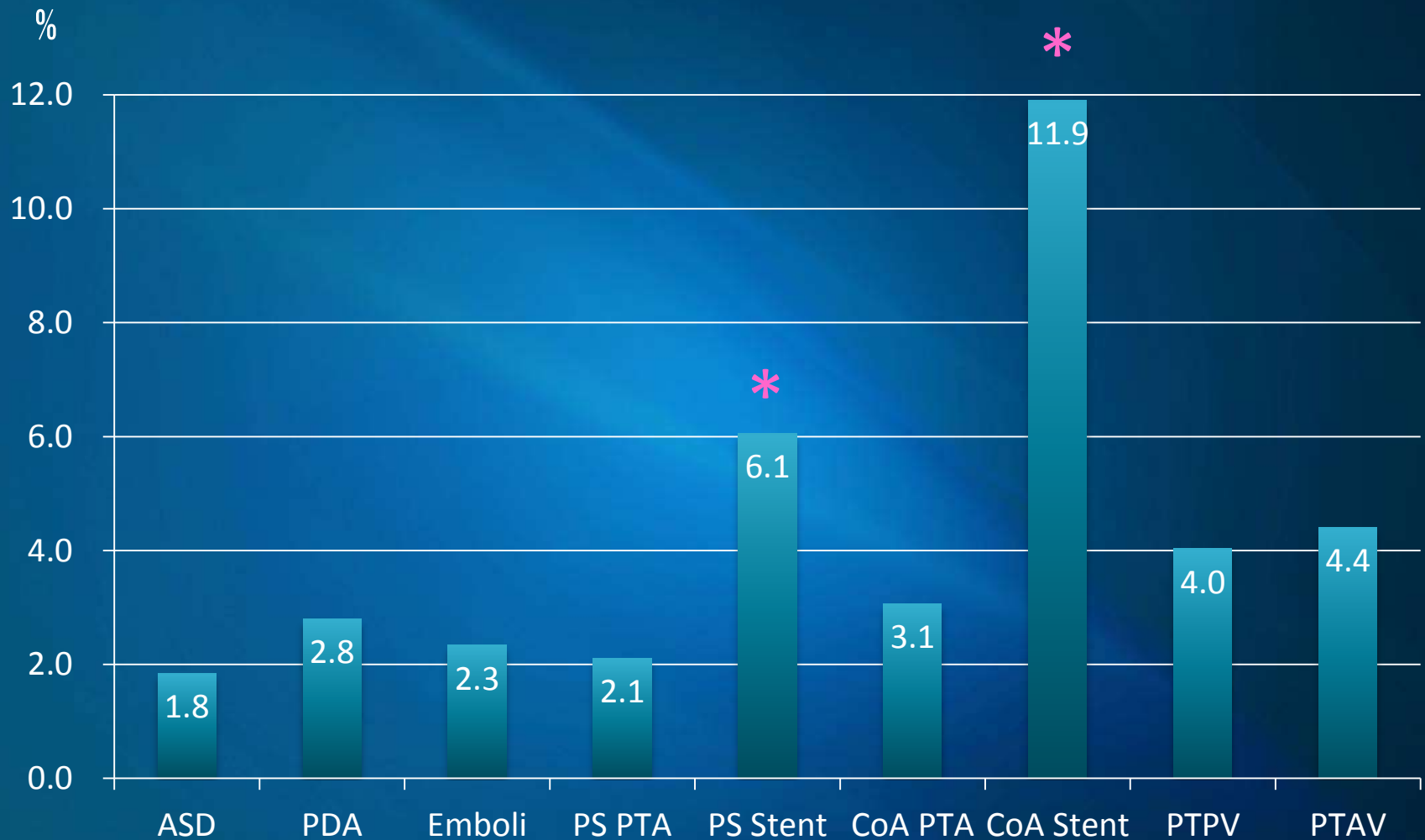
The number of PTPV included PA/IVS

Success Rate of each Procedure



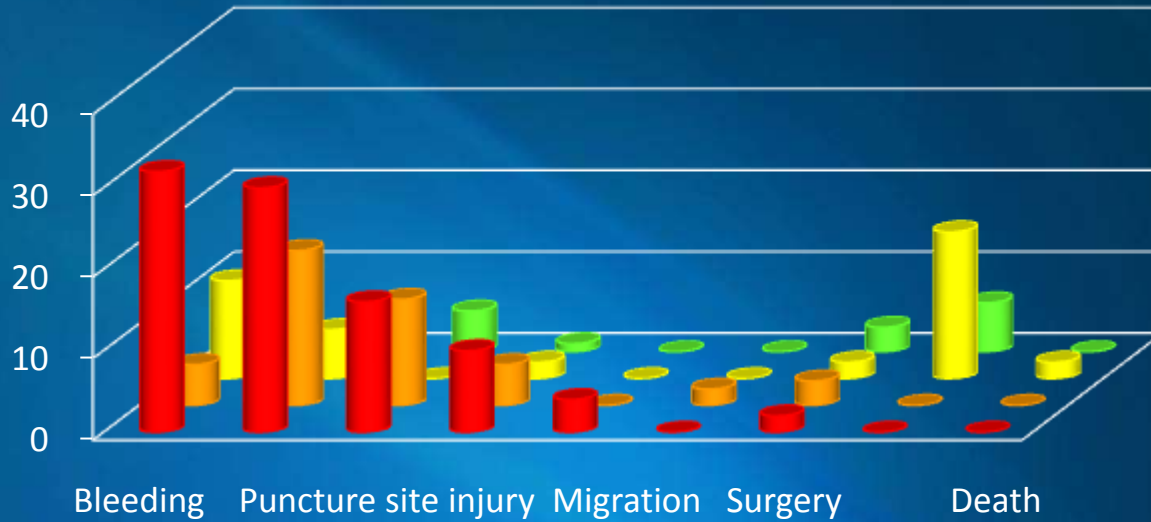
Success rate of PS PTA, 84.6%, tended to be lower than that of the other procedures

Adverse event Rate of each Procedure



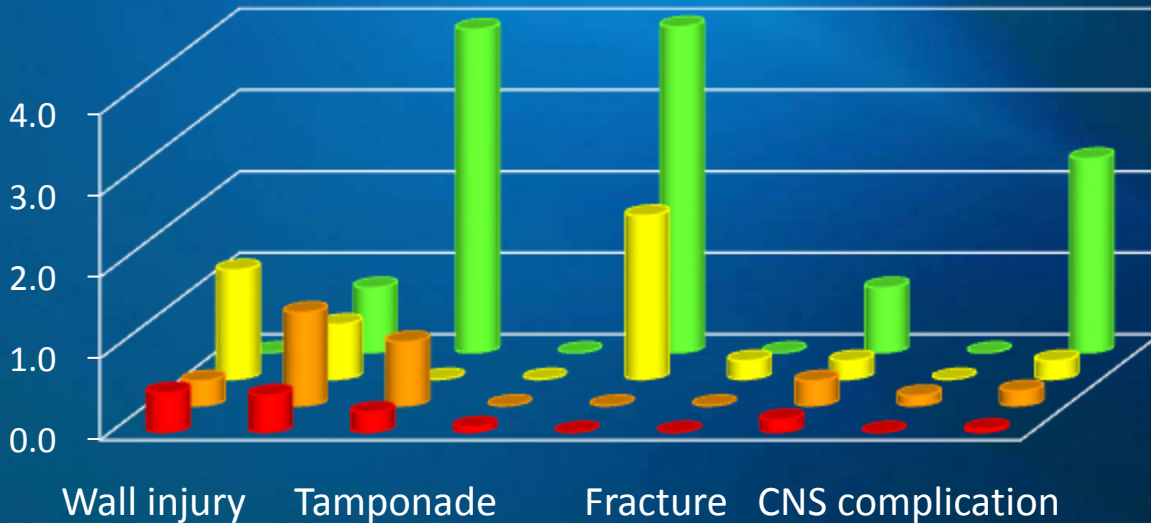
Adverse Event in stenting

Actual Number
(n)



Event Rate

(%)



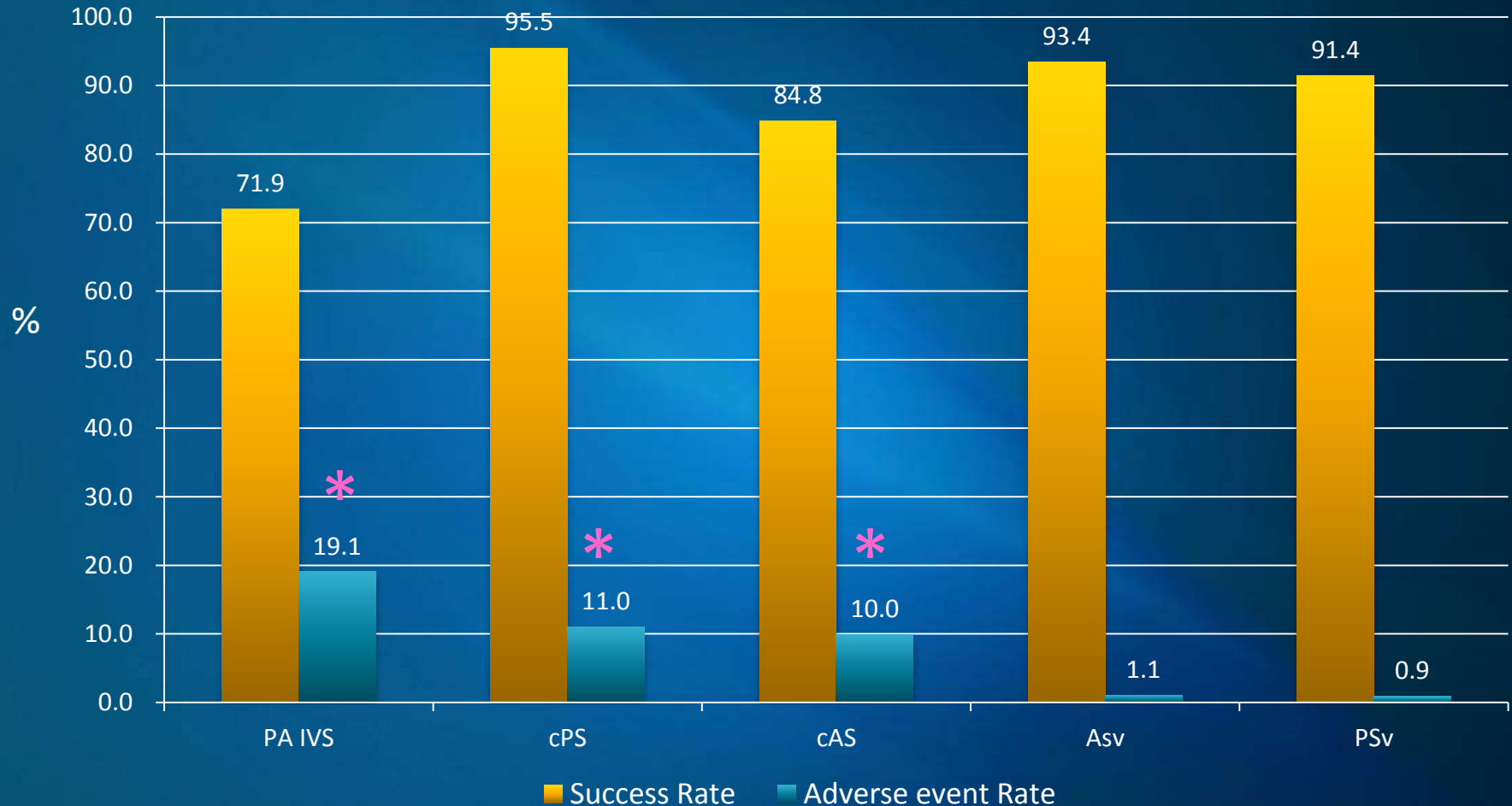
Comparison of total AE rate in PTA and Stenting

Procedure			Total AE / n	AE rate (%)	P
CoA	native	PTA	27 / 363	7.4	NS
		Stent	6 / 60	10.0	
	post op	PTA	30 / 1298	2.3	<0.01
		Stent	14 / 66	21.2	
PS	native	PTA	10 / 433	2.3	<0.05
		Stent	4 / 43	9.3	
	post op	PTA	124 / 6191	2.0	<0.01
		Stent	53 / 854	9.1	

Comparison of severe AE rate in PTA and Stenting

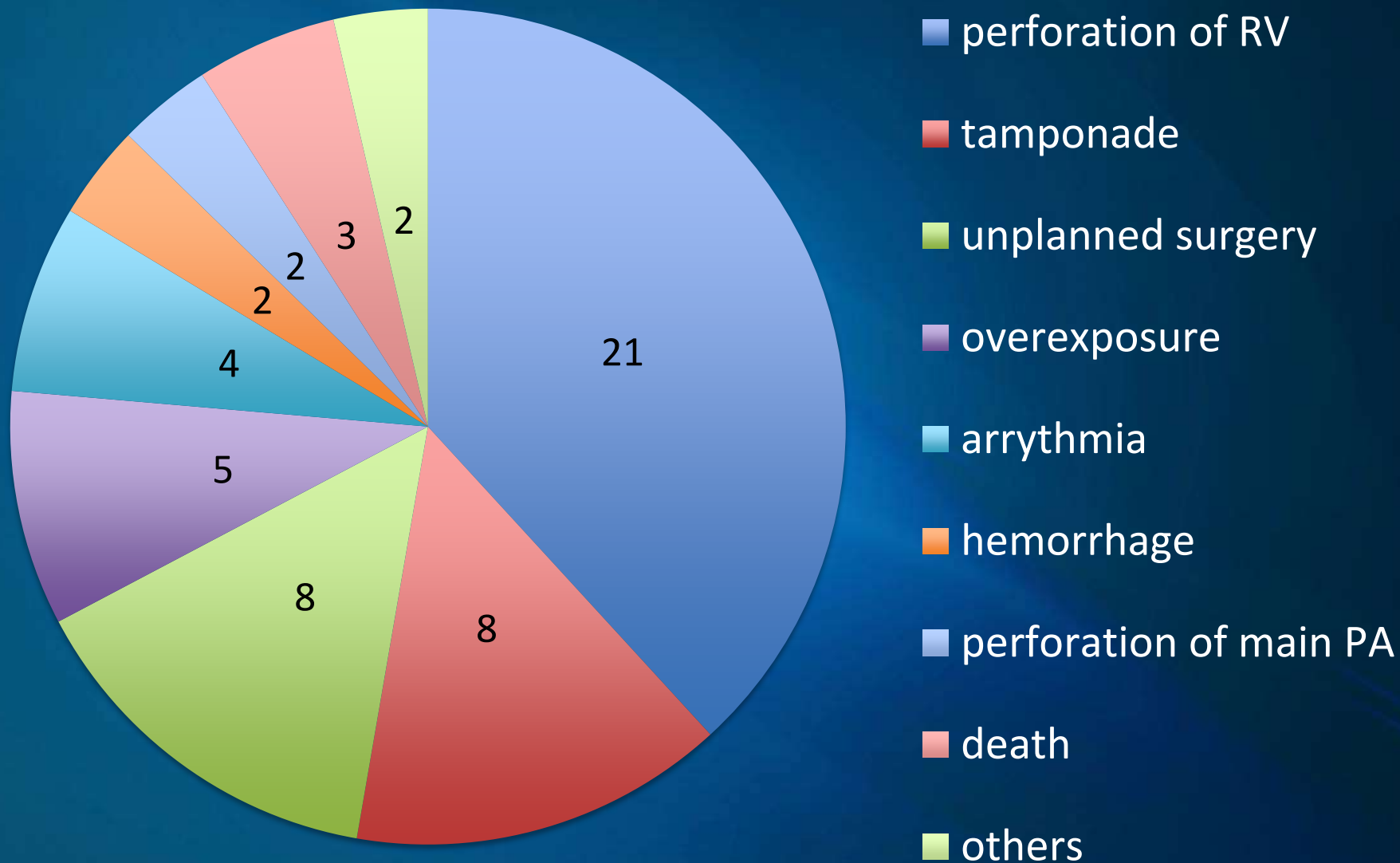
Procedure			Severe AE / n	Severe AE rate (%)	P
CoA	native	PTA	3 / 363	0.8	NS
		Stent	2 / 60	3.3	
	post op	PTA	7 / 1298	0.5	<0.05
		Stent	2 / 66	3.0	
PS	native	PTA	1 / 433	0.2	NS
		Stent	0 / 43	0.0	
	post op	PTA	11 / 6191	0.2	NS
		Stent	4 / 854	0.7	

Success and Adverse event rate in PTPV and PTAV

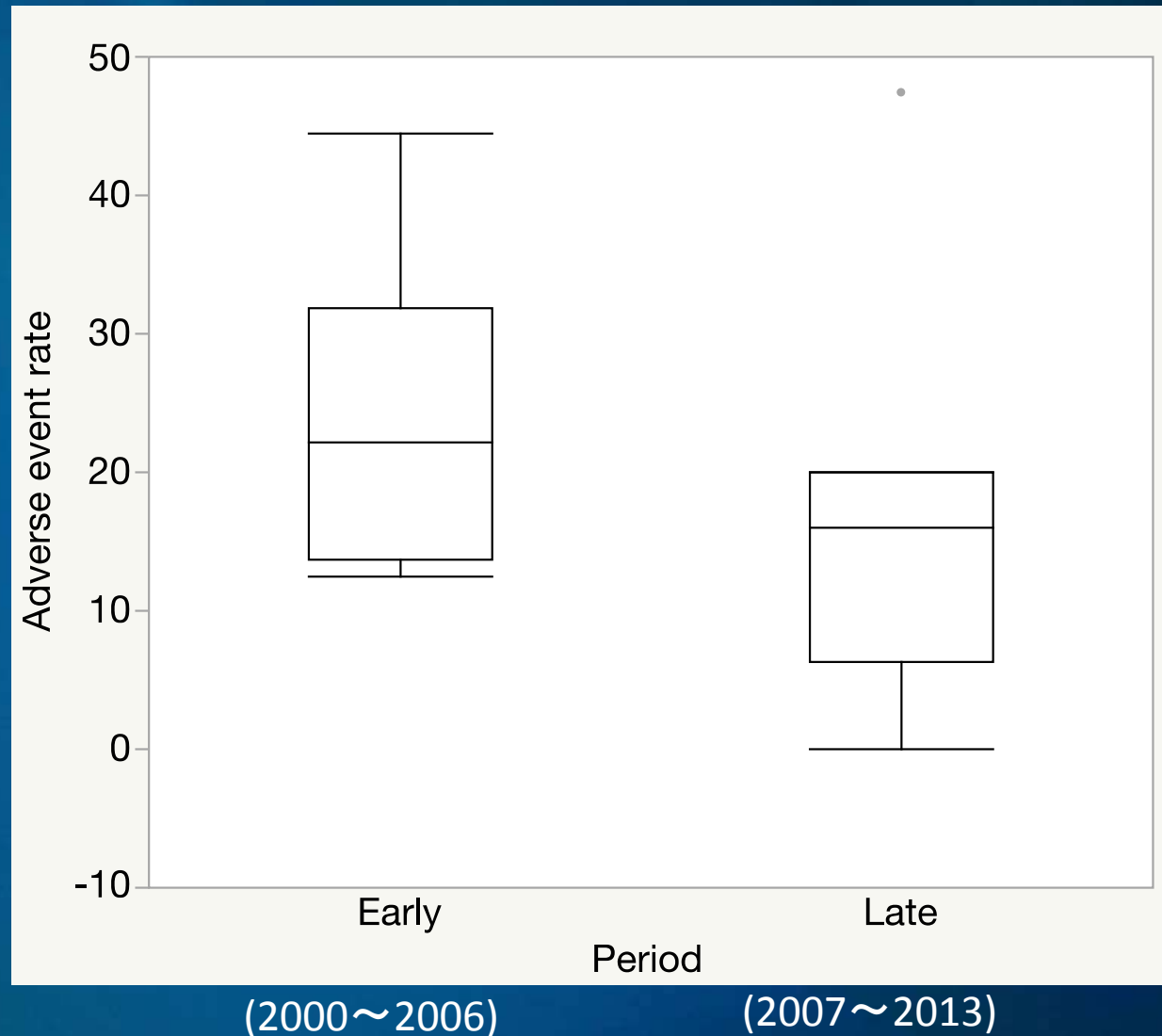


* Adverse event rate in pulmonary atresia, critical PS, and critical AS, 0-20.3 (12.7 ± 5.1) %, was significantly higher than that in AS and PS (P < 0.0001)

Reported AE in PA IVS



AE rate in study periods



There was no significant difference between different periods (23 ± 11 vs $17 \pm 14\%$)

Conclusions

- These data in longer than 10 years indicate a current trend in the transcatheter treatment for congenital heart diseases in our country.
- Adverse event rates in valvuloplasty for pulmonary atresia, critical PS AS, and stenting were higher than other procedures.