

주최·주관 대한심장혈관흉부외과학회

# 2024 대한심장혈관흉부외과학회 제56차 추계학술대회

2024. 10. 31 (Thu) - 11. 01 (Fri) 여수 엑스포 컨벤션센터



## The Fate of **Saphenous Vein Graft** Used in Coronary Artery Bypass Surgery According to the Source of Inflow: From the Aorta versus From the Internal Thoracic Artery

- **The saphenous vein graft (SVG)** remains the **most commonly used conduit** in coronary artery bypass grafting (CABG).
- **The aorta** has been the most reliable and commonly used inflow source for SVG. However, in situations where **an-aortic surgery** is necessary, **an alternative inflow source** should be used, such as an **in-situ internal thoracic artery (ITA)**.
- This study aimed to investigate the **graft patency of SVG** over a decade, as assessed by the **coronary CT angiography**, with a particular focus on determining whether the choice of **inflow source** influences the performance of this conduit.

4170 patients  $\geq 18$  years with Isolated CABG  
between Jan 2001 and Dec 2020

2210 patients with saphenous vein graft (SVG)

1400 patients with graft patency exam

**1378 *In-situ* ITA (internal thoracic arteries)**

**1458 SVG (Saphenous vein grafts)**

1017 Sequential grafts

441 Individual grafts

**1097 A-SVG**

: Sourced from Aorta

**361 Y-SVG**

: Sourced from in-situ ITA

Baseline Profiles	A-SVG n=1097	Y-SVG n=361	P value
Female	288 (26.3)	103 (28.5)	0.436
Age	64.9 ± 8.5	68.7 ± 7.6	<0.001
Body mass index	24.1 ± 4.4	23.9 ± 4.0	0.425
Smoking	480 (43.8)	163 (45.2)	0.687
Diabetes	554 (50.5)	197 (54.6)	0.2
Dyslipidemia	395 (36.0)	148 (41.0)	0.101
Chronic kidney disease	99 (9.0)	52 (14.4)	0.005
Hypertension	796 (72.6)	274 (75.9)	0.239
Stroke history	121 (11.0)	61 (16.9)	0.005
Chronic obstructive pulmonary disease	263 (24.0)	70 (19.4)	0.084
Peripheral artery occlusive disease	140 (12.8)	69 (19.1)	0.004
PCI history	92 (8.4)	53 (14.7)	0.001

Operative Profiles	A-SVG n=1097	Y-SVG n=361	P value
Sequential anastomosis	752 (68.6)	267 (74.0)	0.06
Distal target			<0.001
Lateral wall	365 (33.3)	174 (48.2)	
Inferior wall	542 (49.4)	173 (47.9)	
dRCA	190 (17.3)	14 ( 3.9)	
Target vessel stenosis degree			
Moderate (<70%)	135 (12.3)	24 ( 6.6)	
Severe (>70%, <90%)	417 (38.0)	111 (30.7)	
Critical (>90%)	545 (49.7)	226 (62.6)	
SVG critical stenosis	545 (49.7)	226 (62.6)	<0.001

### Multivariable analysis for graft failure

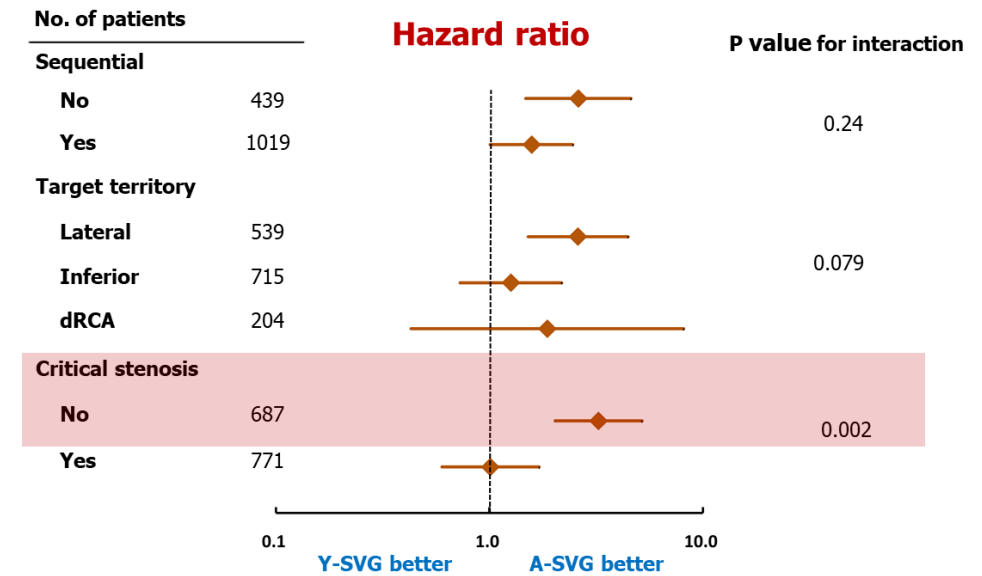
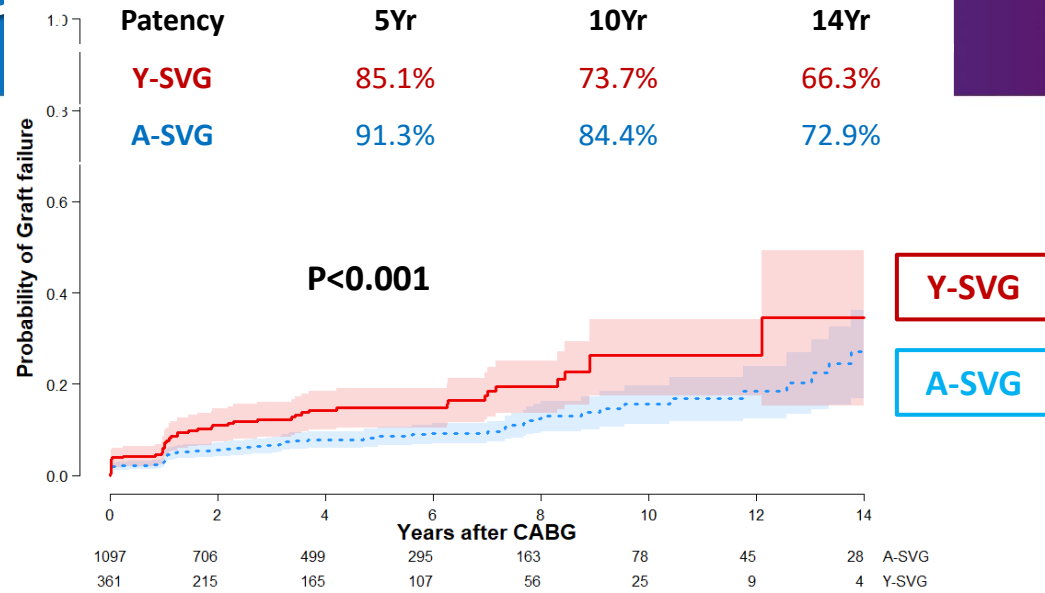
	Whole graft			A-SVG			Y-SVG		
	HR	95% CI	P value	HR	95% CI	P value	HR	95% CI	P value
Y-SVG	1.94	1.36-2.75	<0.001						
COPD	1.73	1.15-2.61	0.009	1.84	1.11-3.03	0.017	1.49	0.72-3.10	0.28
Dyslipidemia	0.76	0.53-1.08	0.12	0.72	0.46-1.13	0.16	0.87	0.49-1.55	0.64
Critical stenosis >90%	0.78	0.56-1.09	0.15	1.14	0.75-1.72	0.54	0.38	0.22-0.68	0.001



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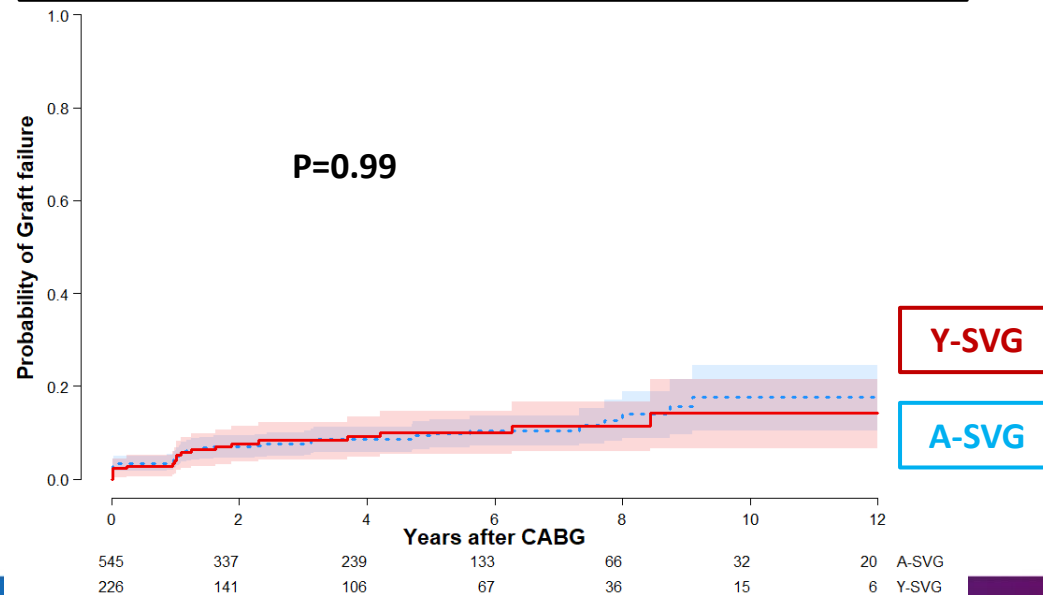
## Graft Patency according to Inflow-source

## Subgroup Analysis across various subgroups

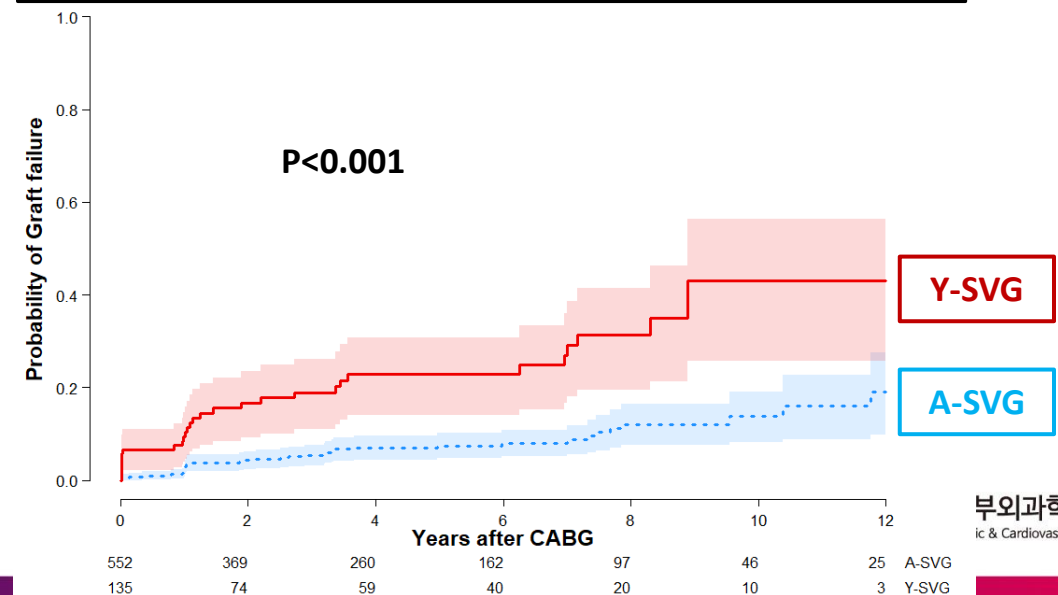


## A-SVG versus Y-SVG

### Critical Stenosis (stenosis ≥ 90%)



### Non-Critical stenosis (stenosis < 90%)



- The long-term **graft patency** of **SVG** was **excellent** over a decade.
- **Vein graft patency** was highly affected by the inflow source, but by anastomosis technique (sequential vs. individual) or end-target territory.
- The patency of vein graft sourced from aorta (A-SVG) was not affected by the target-vessel stenosis degree, but this factor was a key determinant for the patency of Y-grafts source from in-situ ITA (Y-SVG).
- **Aortic anastomosis of the SVG (A-SVG)** may enhance the graft patency and can be a preferred technique, especially **in the absence of critical stenosis** in the target vessel.