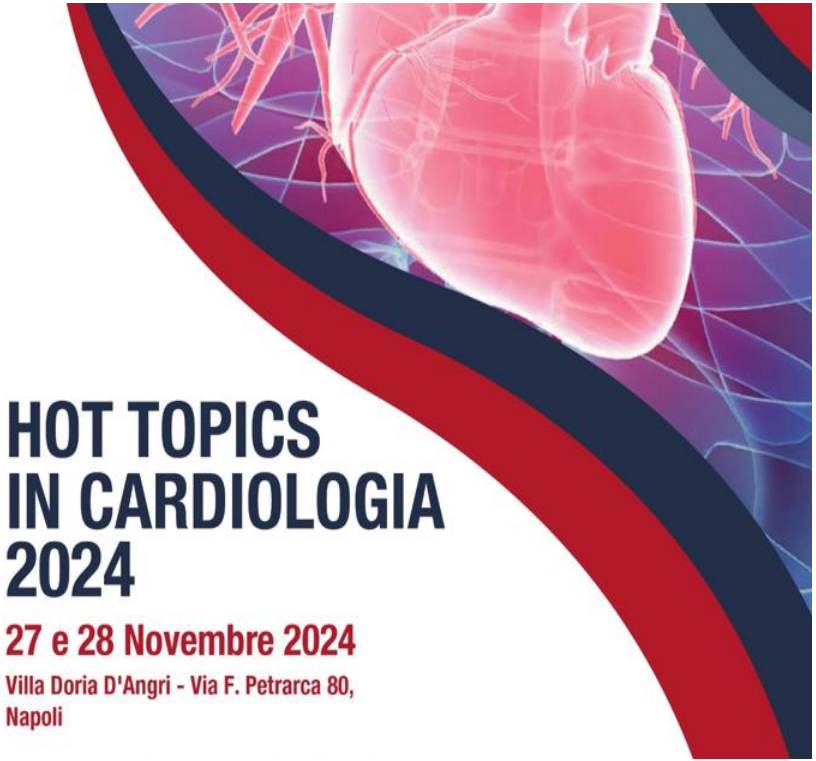
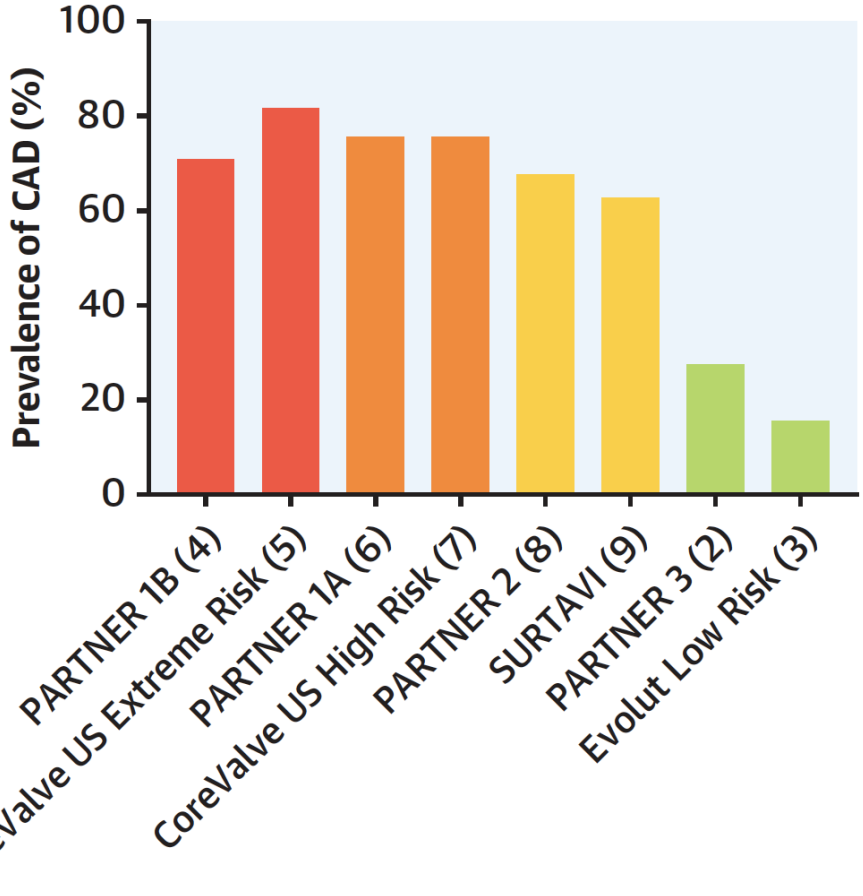
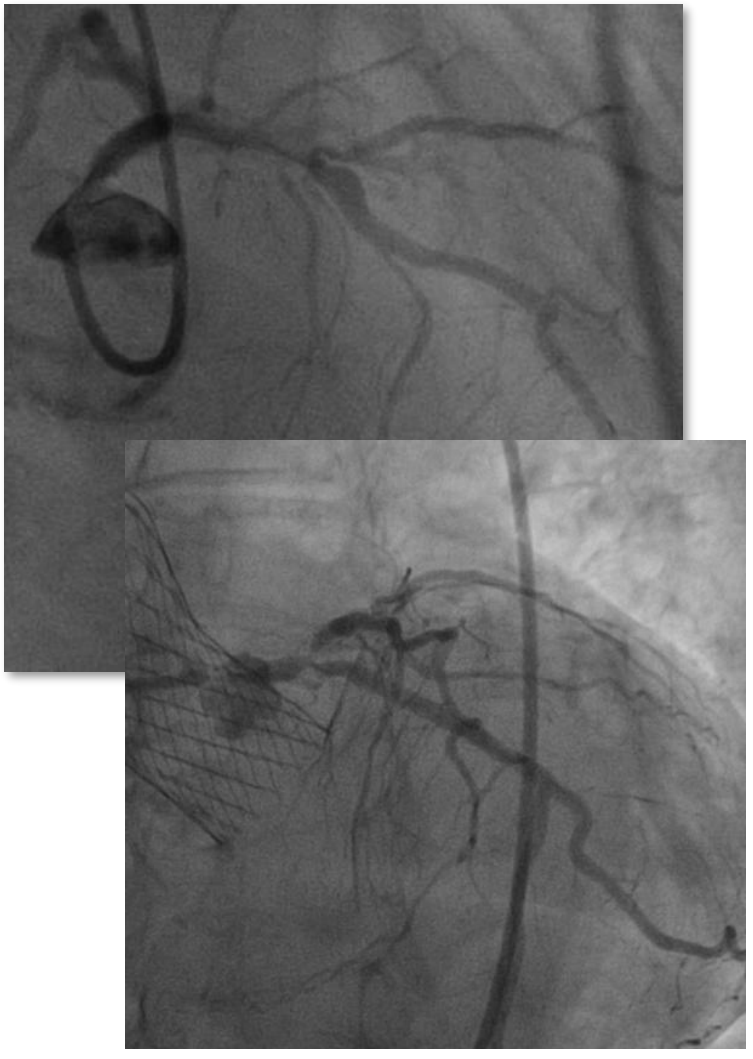



# TAVI e CAD: a tutti sempre e solamente l'angioplastica delle lesioni prossimali?

**Dr. Carmine Musto, PhD**
**UOS Cardiologia Interventistica**
**Ospedale San Camillo-Forlanini-Roma**
**Membro del CD SICI-GISE**

# Prevalence of CAD in TAVR Recipients According to Surgical Risk



2020 ACC/AHA Guideline for the Management of Patients With Valvular Heart Disease

2021 ESC/EACTS Guidelines for the management of valvular heart disease

## Recommendations for management of CAD in patients undergoing TAVI

| 2a | C-LD |
|---|---|

In patients undergoing TAVI with significant left main or proximal CAD with or without angina, revascularization by PCI before TAVI is reasonable

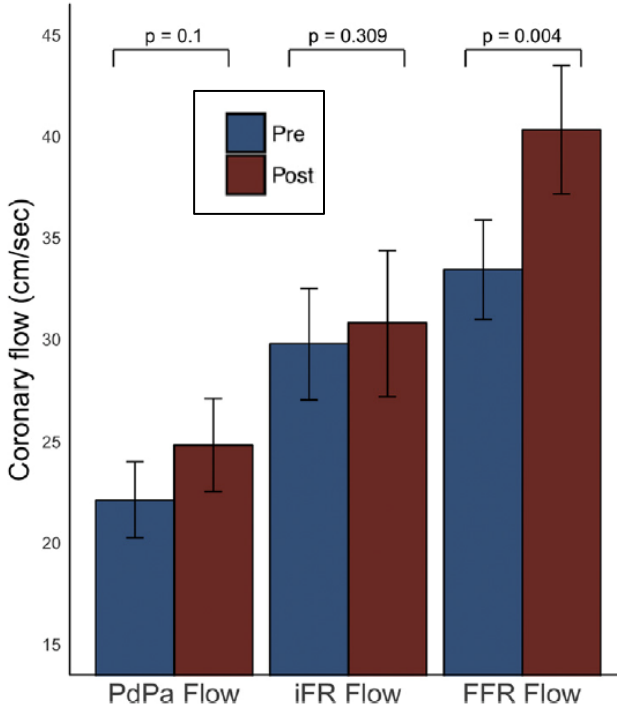
| IIa | C |
|---|---|

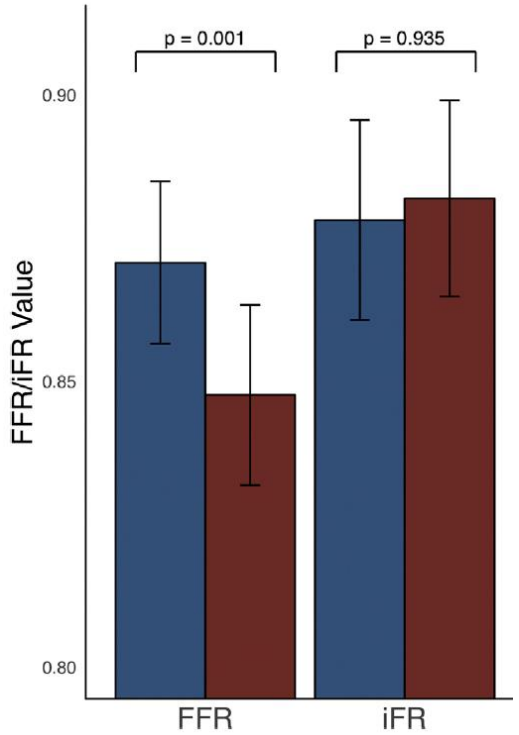
PCI should be considered in patients with a primary indication to undergo TAVI and coronary artery diameter stenosis >70% in proximal segments

# Un-answered questions regarding the optimal management of CAD in patients undergoing TAVI

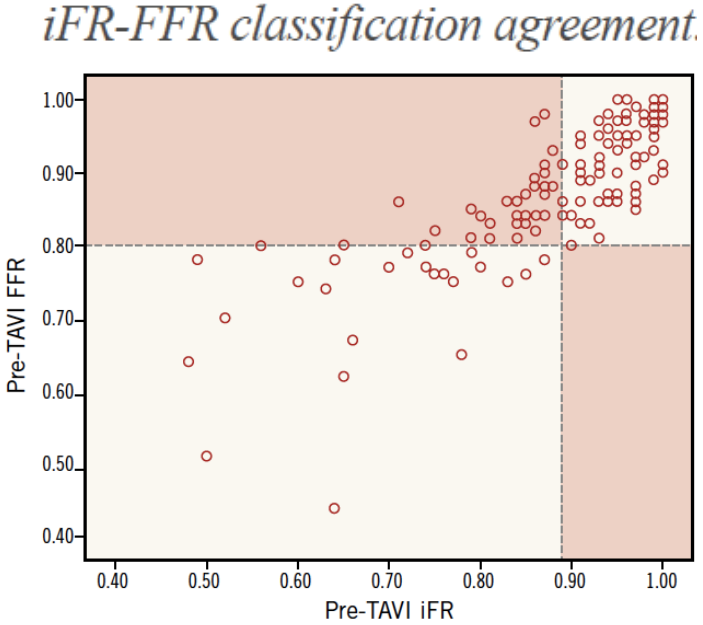
- Assessment of CAD severity
- Extent of myocardial revascularization
- Timing of PCI and TAVI procedures

# Coronary hemodynamics in patients with severe aortic stenosis and CAD undergoing TAVI



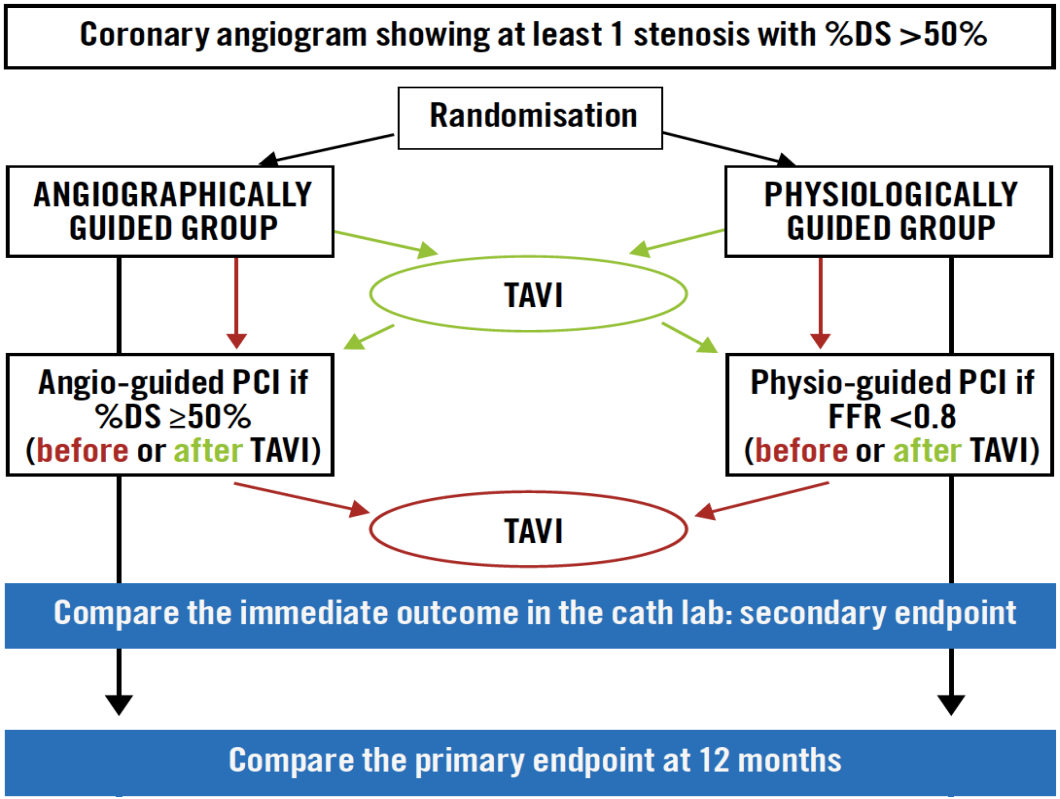




Ahmad Y et al. JACC Interv. 2018




Scarsini R et al. EuroIntv. 2018

# A randomised multicentre study of angiography- versus physiology-guided PCI in patients with CAD undergoing TAVI: design and rationale of the FAITAVI trial




Ribichini F. et al EuroInterv 2024

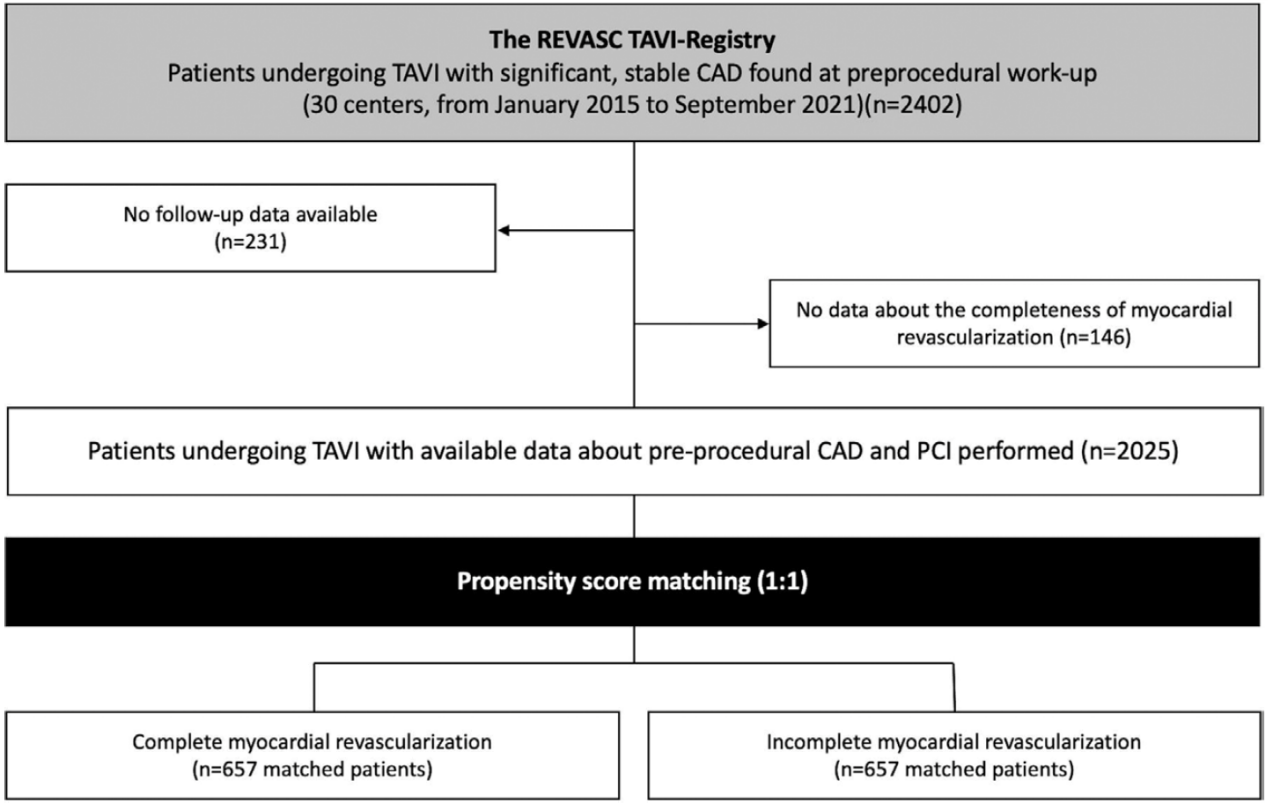
# Un-answered questions regarding the optimal management of CAD in patients undergoing TAVI

- Assessment of CAD severity
- Extent of myocardial revascularization
- Timing of PCI and TAVI procedures

# Management of Myocardial Revascularization in Patients With Stable Coronary Artery Disease Undergoing Transcatheter Aortic Valve Implantation

## REVASC-TAVI registry

*Costa G et al. Circ CV Intv 2022*



# Management of Myocardial Revascularization in Patients With Stable Coronary Artery Disease Undergoing Transcatheter Aortic Valve Implantation

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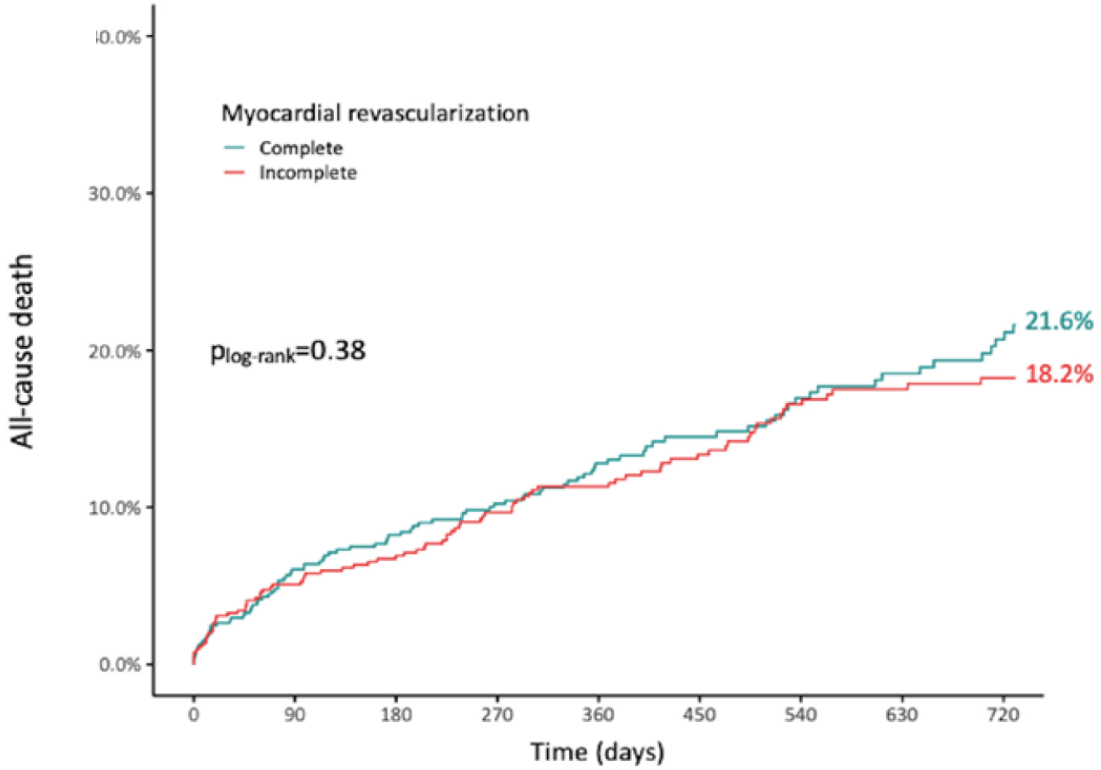
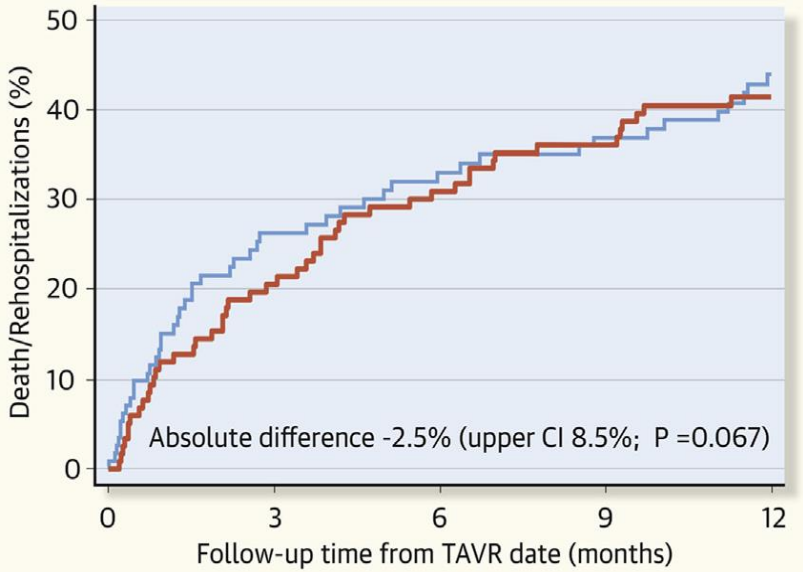
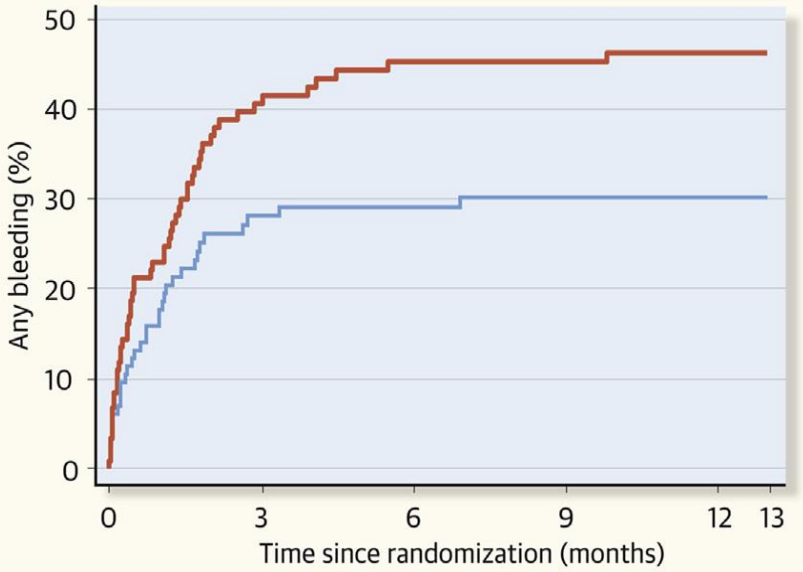


# Un-answered questions regarding the optimal management of CAD in patients undergoing TAVI

- Assessment of CAD severity
- Extent of myocardial revascularization
- Timing of PCI and TAVI procedures

# ACTIVATION Trial of PCI Before TAVR



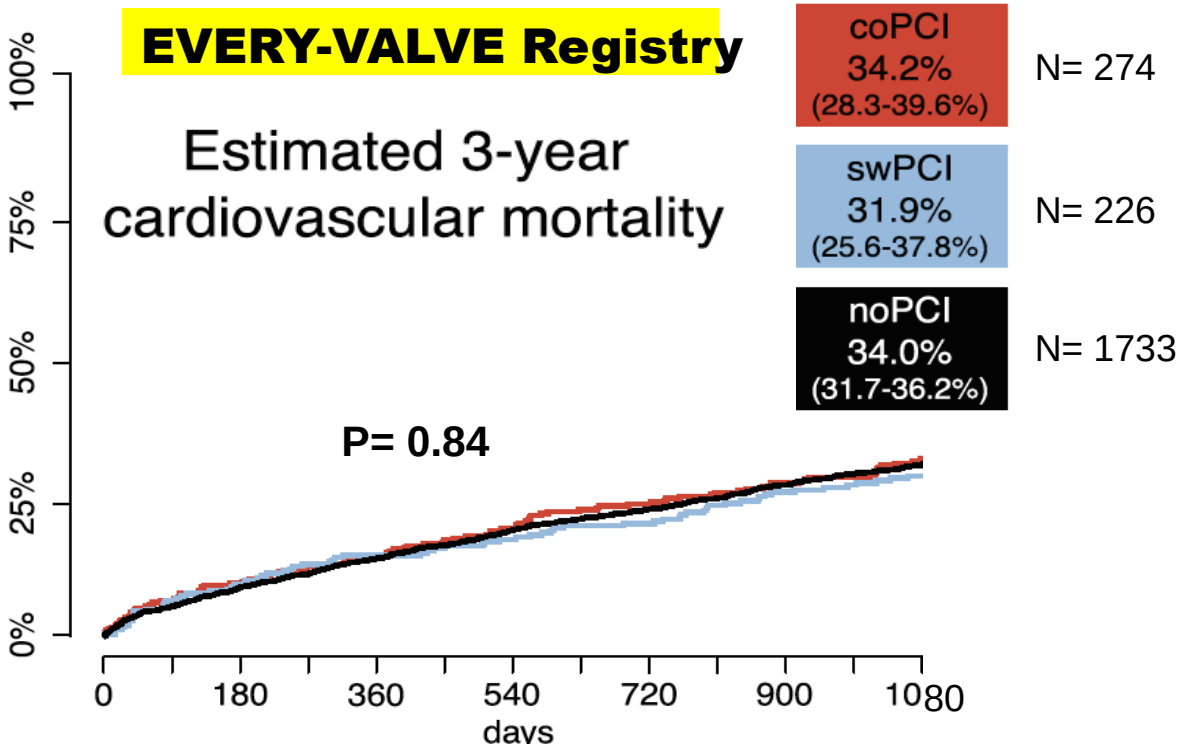



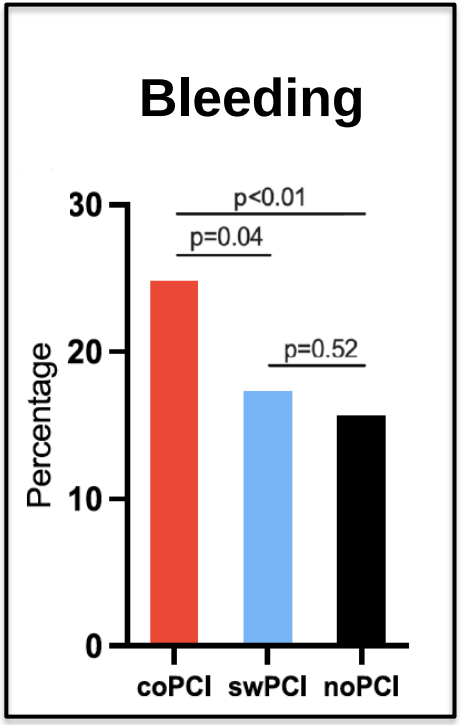

| No. at risk: | | | | | |
|---|---|---|---|---|---|
| PCI | 119 | 92 | 80 | 73 | 56 |
| No PCI | 116 | 78 | 69 | 65 | 50 |

| No. at risk: | | | | | | |
|---|---|---|---|---|---|---|
| PCI | 119 | 65 | 58 | 56 | 52 | 39 |
| No PCI | 116 | 72 | 66 | 64 | 63 | 30 |

*Patterson T et al. JACC Intv. 2021*

# Concomitant percutaneous coronary intervention in patients undergoing transcatheter aortic valve implantation



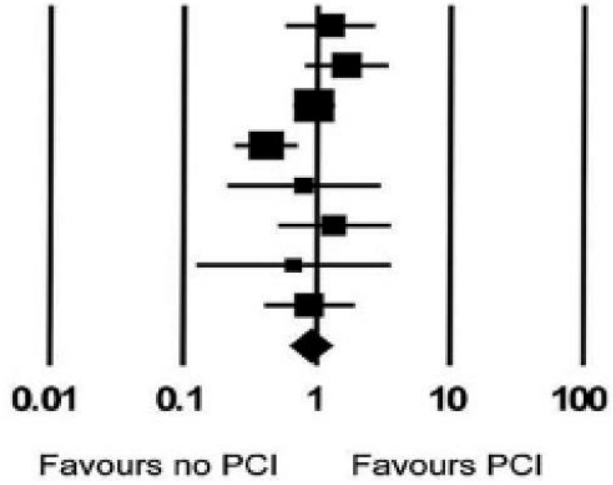




*Fischer J et al. CCI 2024*

# Percutaneous coronary intervention in patients undergoing transcatheter aortic valve implantation: a systematic review and meta-analysis

## All-cause mortality (≤ one year)

| Study name | Odds ratio | Lower limit | Upper limit | p-Value |
|---|---|---|---|---|
| Elyasi et al, 2018 | 1.24 | 0.58 | 2.66 | 0.58 |
| Caze et al, 2019 | 1.65 | 0.82 | 3.34 | 0.16 |
| Elbaz et al, 2020 | 0.94 | 0.66 | 1.33 | 0.72 |
| Boogert et al, 2021 | 0.41 | 0.24 | 0.70 | 0.001 |
| Dagan et al, 2021 | 0.80 | 0.21 | 2.97 | 0.73 |
| Duran Karaduman et al, 2021 | 1.34 | 0.51 | 3.50 | 0.55 |
| Kaihara et al, 2021 | 0.67 | 0.13 | 3.58 | 0.64 |
| Patterson et al, 2021 | 0.88 | 0.41 | 1.90 | 0.75 |
| | 0.91 | 0.64 | 1.29 | 0.59 |




3.338 pts with CAD undergoing TAVI
(1.806 underwent PCI before TAVI)

*Aarts HN et al. CCI 2023*

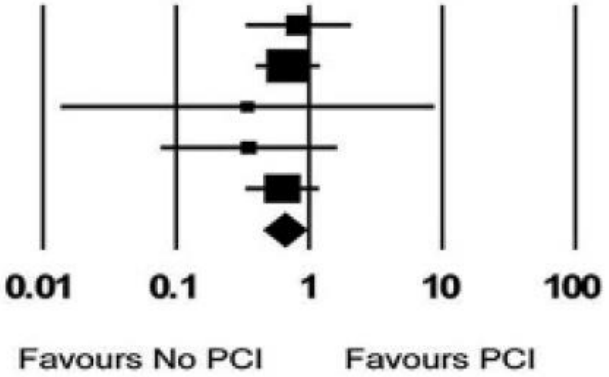
# Percutaneous coronary intervention in patients undergoing transcatheter aortic valve implantation: a systematic review and meta-analysis

## Major bleeding (≤ 30 days)

| Study name | Odds ratio | Lower limit | Upper limit | p-Value |
|---|---|---|---|---|
| Barbanti et al, 2017 | 0.83 | 0.34 | 2.04 | 0.69 |
| Elbaz et al, 2020 | 0.69 | 0.40 | 1.18 | 0.18 |
| Duran Karaduman et al, 2021 | 0.34 | 0.01 | 8.61 | 0.52 |
| Matta et al, 2021 | 0.35 | 0.08 | 1.60 | 0.18 |
| Patterson et al, 2021 | 0.63 | 0.34 | 1.17 | 0.14 |
| | 0.66 | 0.46 | 0.94 | 0.022 |

Statistics for each study

Odds ratio and 95% CI




$I^2 = 0\%$

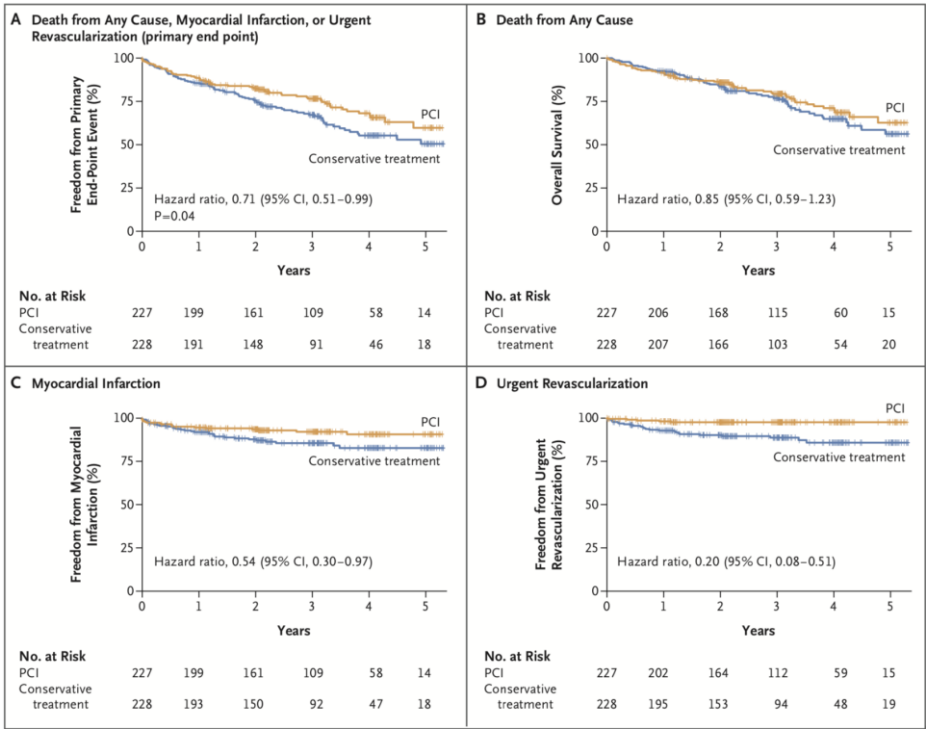
3.338 pts with CAD undergoing TAVI
(1.806 underwent PCI before TAVI)

*Aarts HN et al. CCI 2023*

ORIGINAL ARTICLE

# PCI in Patients Undergoing Transcatheter Aortic-Valve Implantation

- PCI before TAVI 74%
- PCI during TAVI 17%
- PCI after TAVI 9%



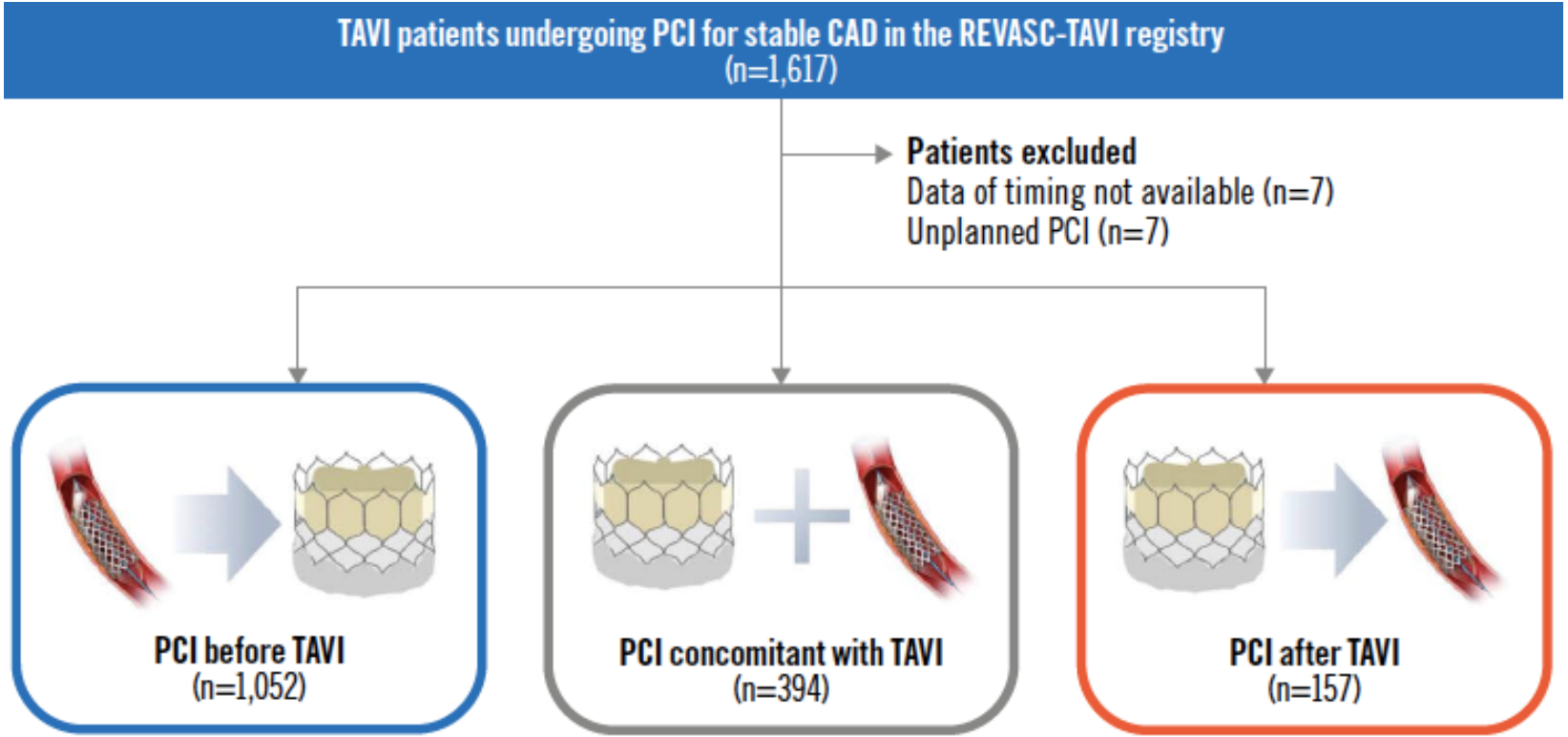

**NOTION 3 study group**
**FFR<0.80 or DS 90%**

Lonborg J, et al. N Eng J Med 2024

# Comparison of different percutaneous revascularisation timing strategies in patients undergoing transcatheter aortic valve implantation

## REVASC-TAVI registry

*Rheude T et al. EuroIntv 2023*



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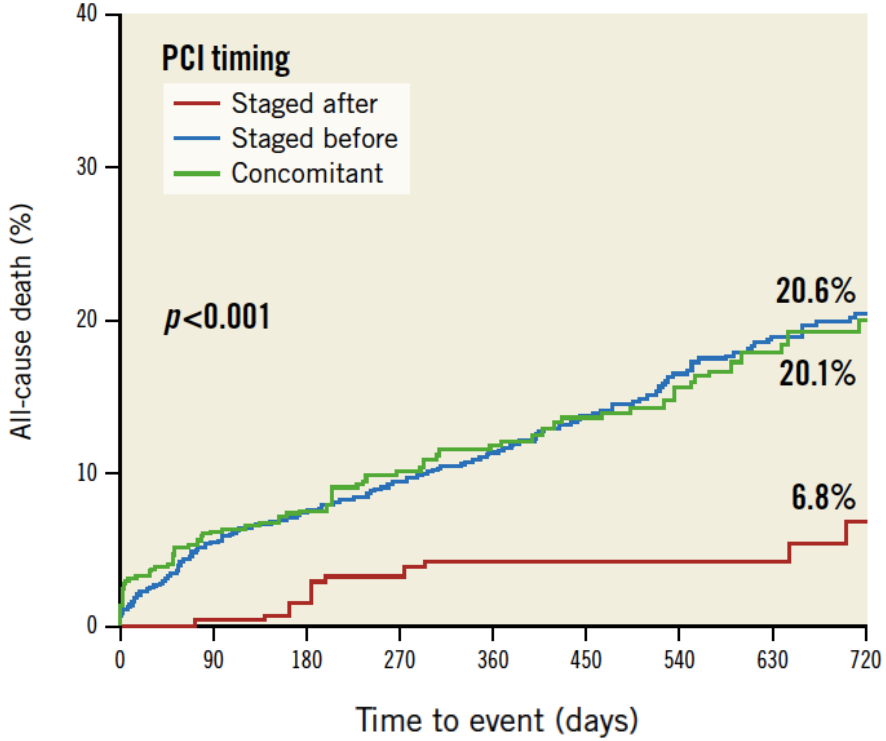
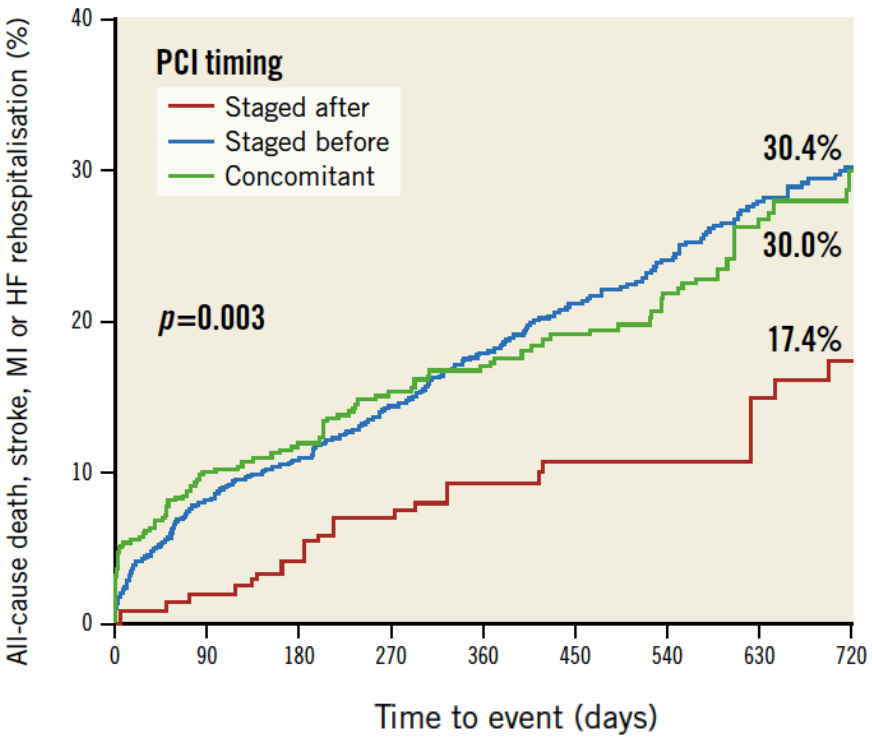
**REVASC-TAVI registry**

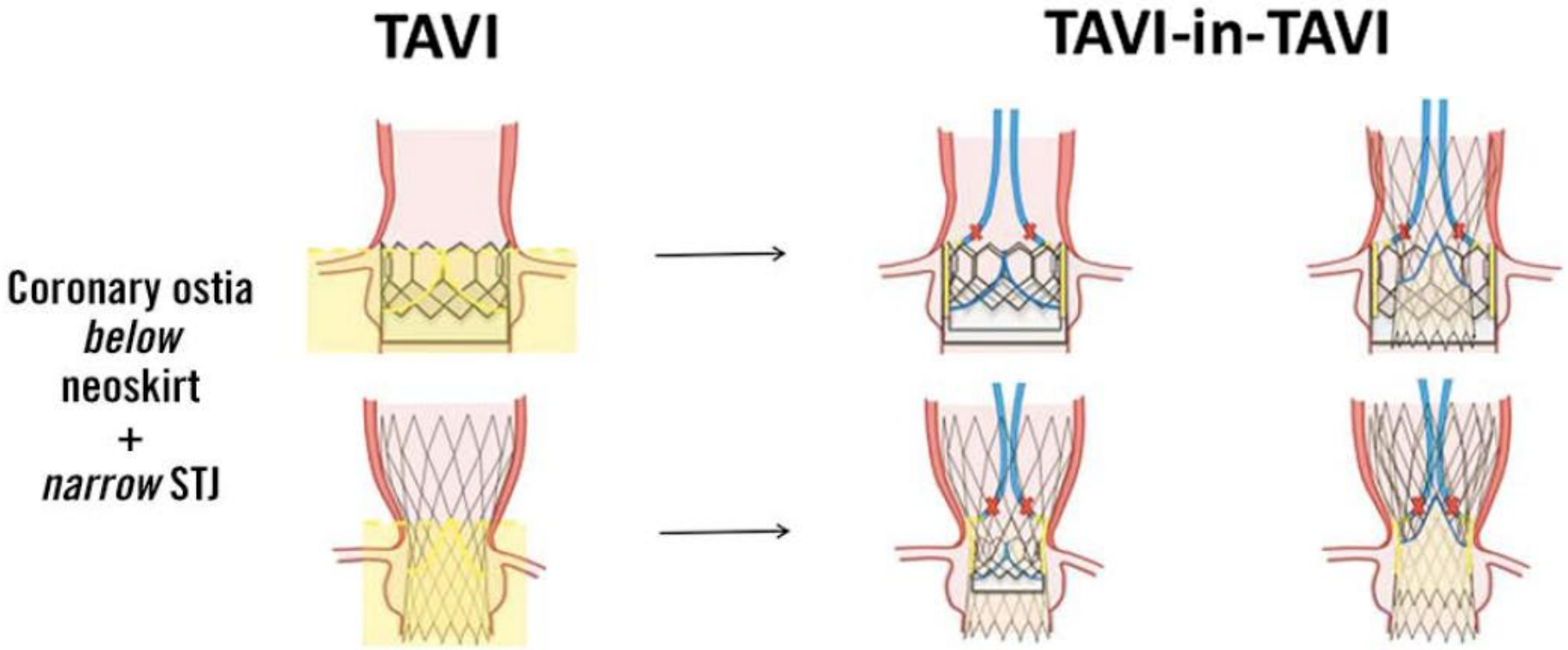
*Rheude T et al. EuroIntv 2023*



# Coronary access and PCI after TAVI

# Coronary access after TAVI and TAVI-in-TAVI with different combinations of Sapien and Corevalve/Evolute THV depending on aortic root anatomy




*Tarantini G et al. EuroIntv 2020*

# Clinical consensus statement from EAPCI and ESC WG on cardiovascular surgery

*Tarantini G et al. EuroIntv 2023*

1) PCI before TAVI should be performed in patients with severe CAD (i.e., DS>70%, >50% for the LM) only in proximal segments, particularly if presenting with an acute coronary syndrome, symptoms of angina or subocclusive lesions (i.e., >90% DS).

2) The timing of PCI with respect to the TAVI procedure should be based on clinical presentation, the patient's anatomical characteristics and coronary lesion complexity.

3) If PCI is planned after TAVI, THV choice (i.e., low-frame versus high-frame) and implantation technique (i.e., commissural alignment) should be aimed at preserving easy coronary access.