# Efficacy and Safety of a Dual Ticagrelor plus Aspirin Antiplatelet Strategy after Coronary Artery Bypass Grafting: The DACAB Randomized Clinical Trial

**Qiang Zhao**[1] Yunpeng Zhu[1], Zhiyun Xu[2], Zhaoyun Cheng[3], Ju Mei[4], Xin Chen[5], Xiaowei Wang[6]

[1]**Ruijin Hospital Shanghai Jiao Tong University School of Medicine, Shanghai, China;**
[2]Changhai Hospital of Shanghai, Shanghai, China;
[3]Henan Provincial People's Hospital, Zhengzhou, China;
[4]Xinhua Hospital, Shanghai Jiaotong University School of Medicine, Shanghai, China;
[5]Nanjing First Hospital, Nanjing, China;
[6]Jiangsu Province Hospital, Nanjing, China

# Disclosures

- Qiang Zhao declares that he has served as a speaker for AstraZeneca, Medtronic, and Johnson & Johnson, and has been an investigator on clinical trials sponsored by AstraZeneca, Novartis, Sanofi, and Bayer
- Yunpeng Zhu has been an investigator on clinical trials sponsored by AstraZeneca, Novartis, Sanofi, and Bayer
- Zhiyun Xu has served as a speaker for Medtronic
- Zhaoyun Cheng has served as a speaker for AstraZeneca, and Medtronic
- Ju Mei has served as a speaker for AstraZeneca, and Medtronic
- Xin Chen has served as a speaker for AstraZeneca, and Johnson & Johnson, and has been an investigator on clinical trials sponsored by Bayer
- Xiaowei Wang has served as a speaker for AstraZeneca, and Johnson & Johnson

# Background

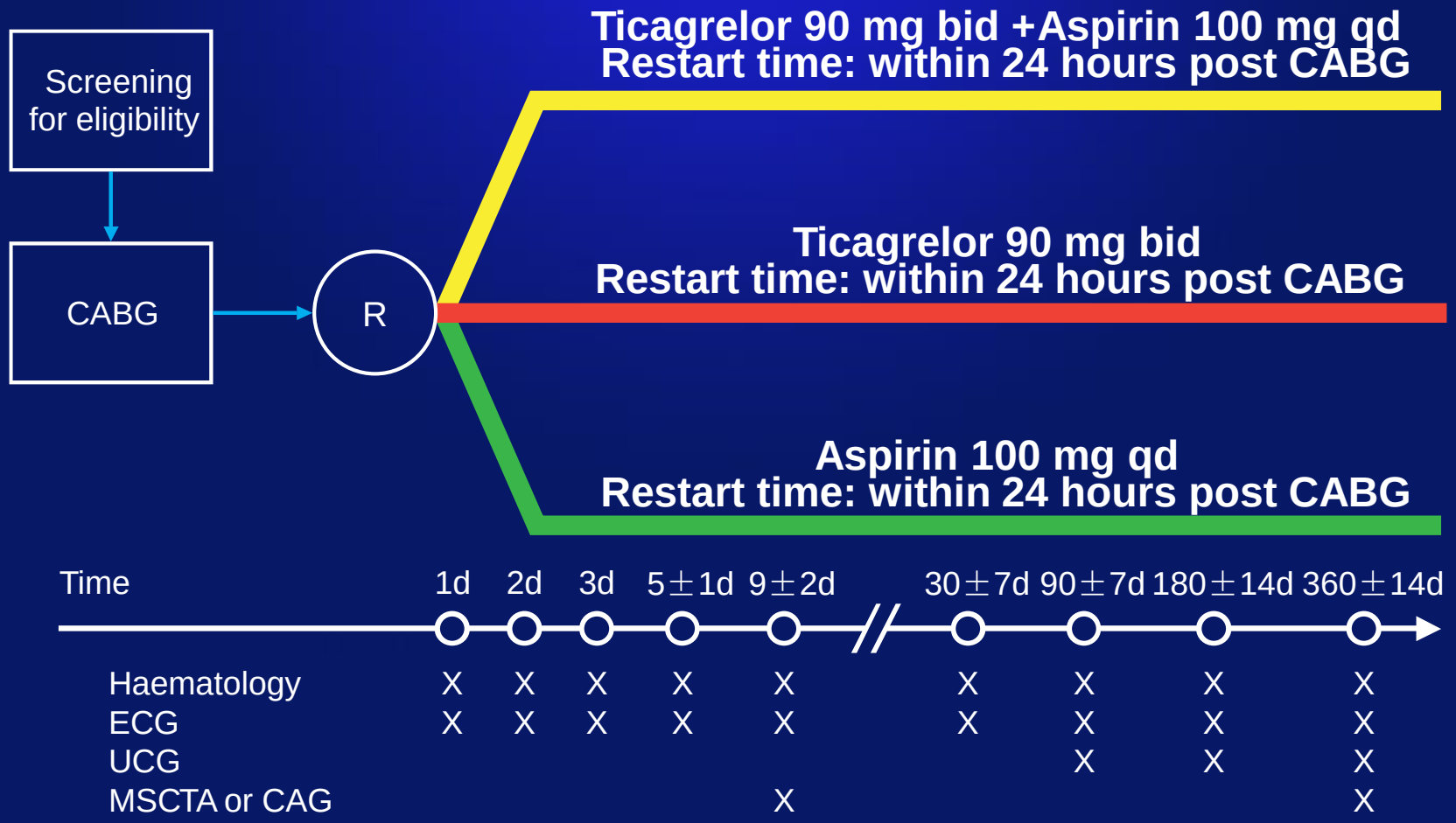
- Currently the saphenous vein graft (SVG) is sill the most commonly used in CABG
- However, the SVG failure rate is 10–25% at 1 year and 50% at 10 years post-CABG
- Dual antiplatelet therapy (DAPT) reduces MACE in patients with ACS who undergo CABG, but data regarding SVG patency is limited
- Effects of dual ticagrelor plus aspirin therapy on graft patency has been evaluated in a small pilot study that was terminated early because of low recruitment

# Objective

- Compare the efficacy and safety of combination ticagrelor plus aspirin therapy (T+A) or ticagrelor monotherapy (T) with aspirin monotherapy (A) on SVG patency 1 year after elective CABG

# Study Design

- Randomized (1:1:1), multicentre, open-label



# Patient Selection Criteria

## Inclusion Criteria

- Age 18-80 years
- Indication for CABG

## Major Exclusion Criteria

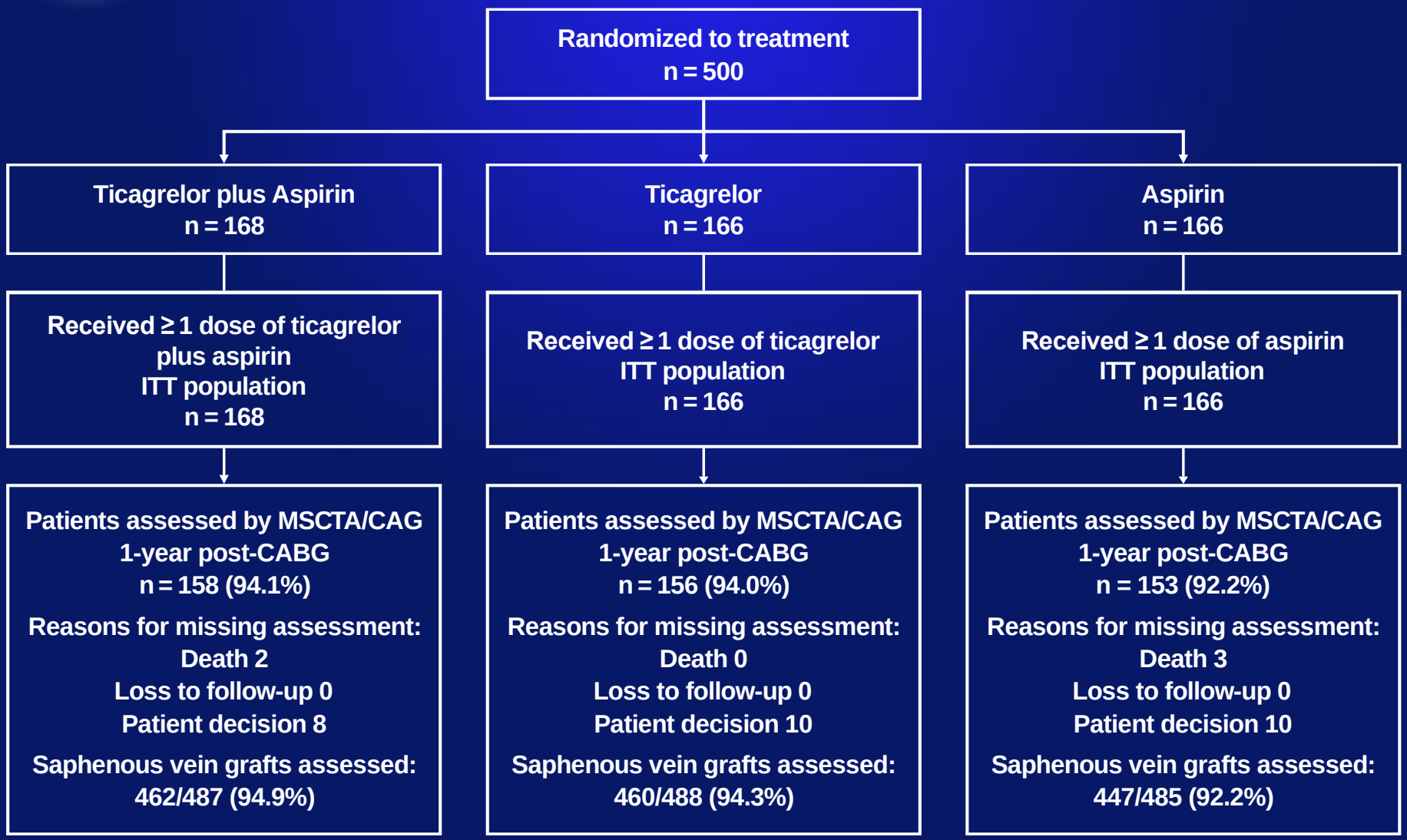
- Cardiogenic shock, hemodynamic instability
- Need for urgent or concomitant cardiac surgery
- Need for DAPT or VKA
- Risk of serious bleeding (eg: history of ICH, bleeding diathesis within 3m, or GI bleed within 1 y)
- Contraindication to study meds

# Outcomes

- **Primary outcome**
  - SVG patency at 1y by MSCTA/CAG (ITT)

- Secondary outcomes
  - SVG patency at 7d
  - MACE within 1y
  - Recurrence of angina within 1y
  - Atrial fibrillation within 7d
  - Bleeding (TIMI criteria) within 1y

# Patient Disposition



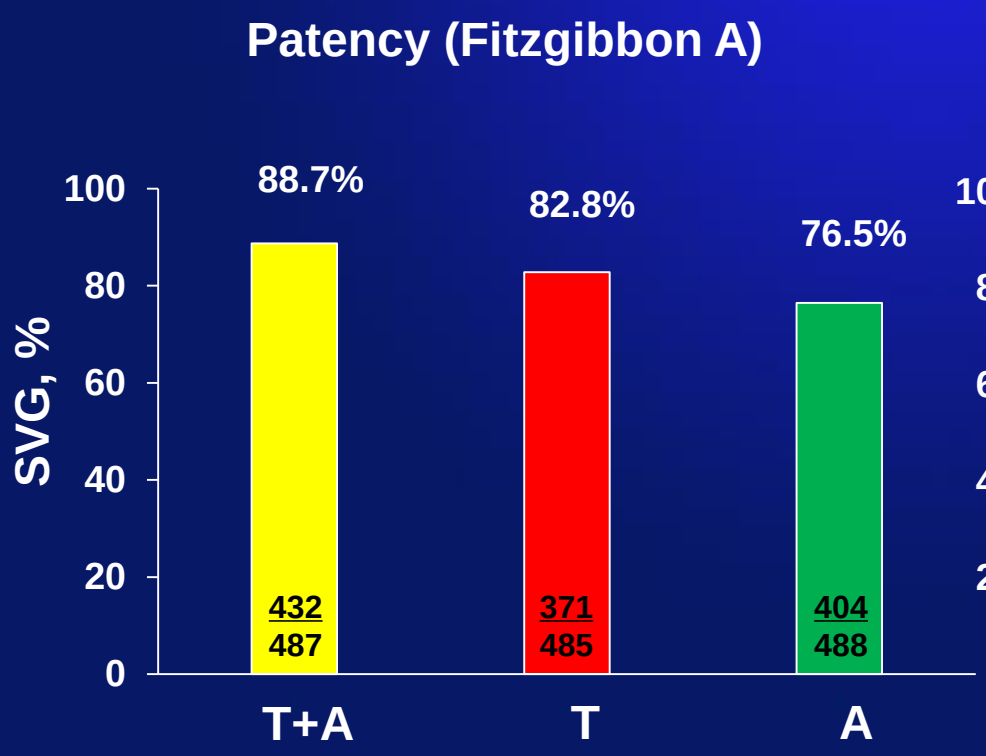
# Baseline Characteristics

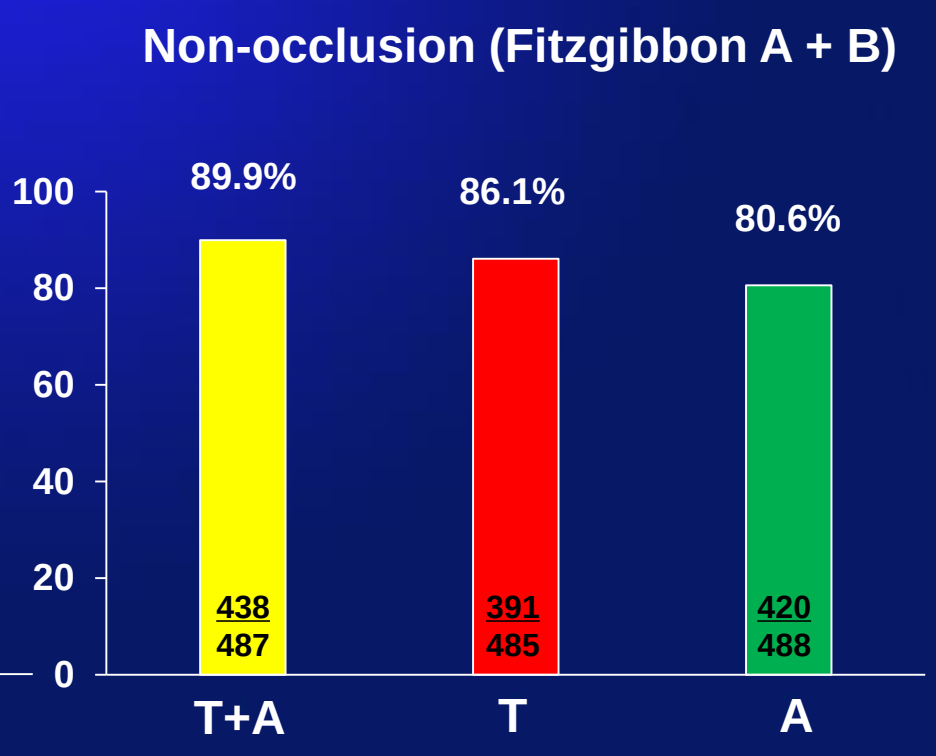
| Characteristics | T+A (n=168) | T alone (n=166) | A alone (n=166) |
|---|---|---|---|
| Mean age (SD), y | 63.5 (8.2) | 63.3 (8.3) | 64.0 (8.1) |
| Male gender, n (%) | 134 (79.8) | 134 (80.7) | 141 (84.9) |
| Status SA, n (%) | 55 (32.7) | 63 (38.0) | 50 (30.1) |
| UA, n (%) | 108 (64.3) | 97 (58.4) | 109 (65.7) |
| NSTEMI, n (%) | 5 (3.0) | 6 (3.6) | 7 (4.2) |
| Hx MI, n (%) | 53 (31.6) | 60 (36.1) | 43 (25.9) |
| Hypertension, n (%) | 127 (75.6) | 122 (73.5) | 120 (72.3) |
| Diabetes mellitus, n (%) | 75 (44.6) | 75 (45.2) | 67 (40.4) |
| Hyperlipidemia, n (%) | 121 (72.0) | 124 (74.7) | 119 (71.7) |
| Smoking, n (%) | 85 (50.6) | 74 (44.6) | 87 (52.4) |

# Baseline Characteristics

| Characteristics | | T+A (n=168) | T alone (n=166) | A alone (n=166) |
|---|---|---|---|---|
| LVEF (%, median) | | 61.0 | 62.0 | 63.0 |
| SYNTAX Score, n (%) | 0–22 | 18 (10.7) | 21 (12.7) | 31 (18.7) |
| | 23–32 | 93 (55.4) | 83 (50.0) | 98 (59.0) |
| | ≥33 | 57 (33.9) | 62 (37.4) | 37 (22.3) |
| EuroScore, n (%) | 0–2 | 71 (42.3) | 63 (38.0) | 64 (38.6) |
| | 3–5 | 65 (38.7) | 82 (49.4) | 82 (49.4) |
| | ≥6 | 32 (19.0) | 21 (12.7) | 20 (12.0) |
| CPB use, n (%) | | 39 (23.2) | 36 (21.7) | 46 (27.7) |
| Grafts/case, n | | 3.7 | 3.8 | 3.8 |
| SVG total, n | | 485 | 487 | 488 |
| SVG/case, n | | 2.9 | 2.9 | 2.9 |

# SVG Outcomes at 1 year (ITT)



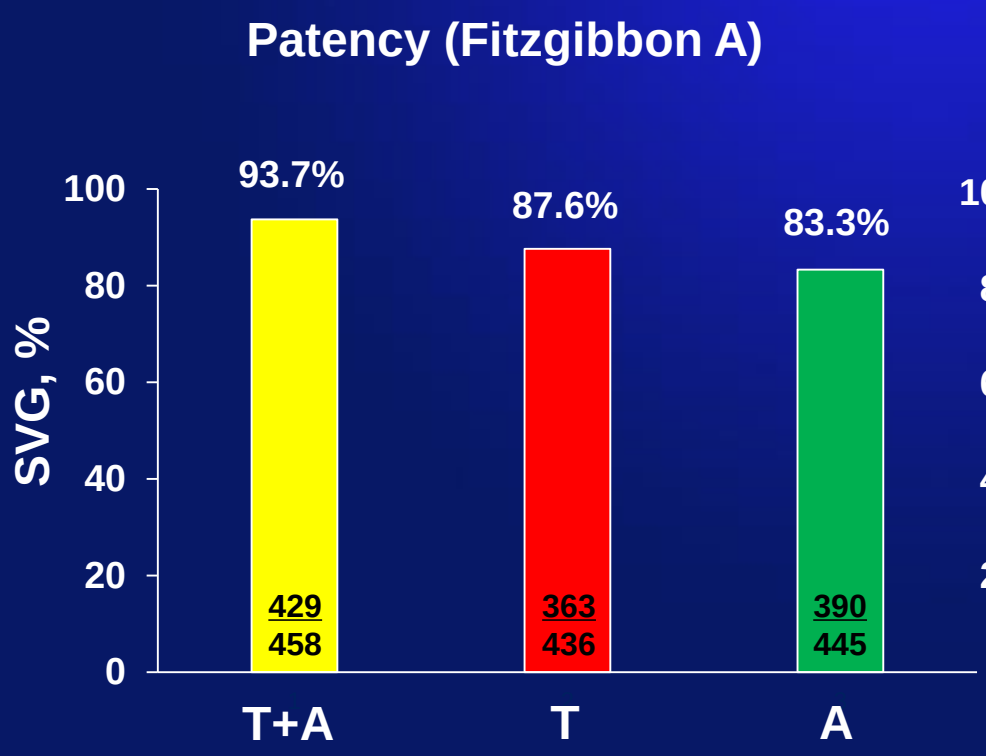

T+A vs A: Δ = 12.2% (5.2, 19.2) *P* = .0006

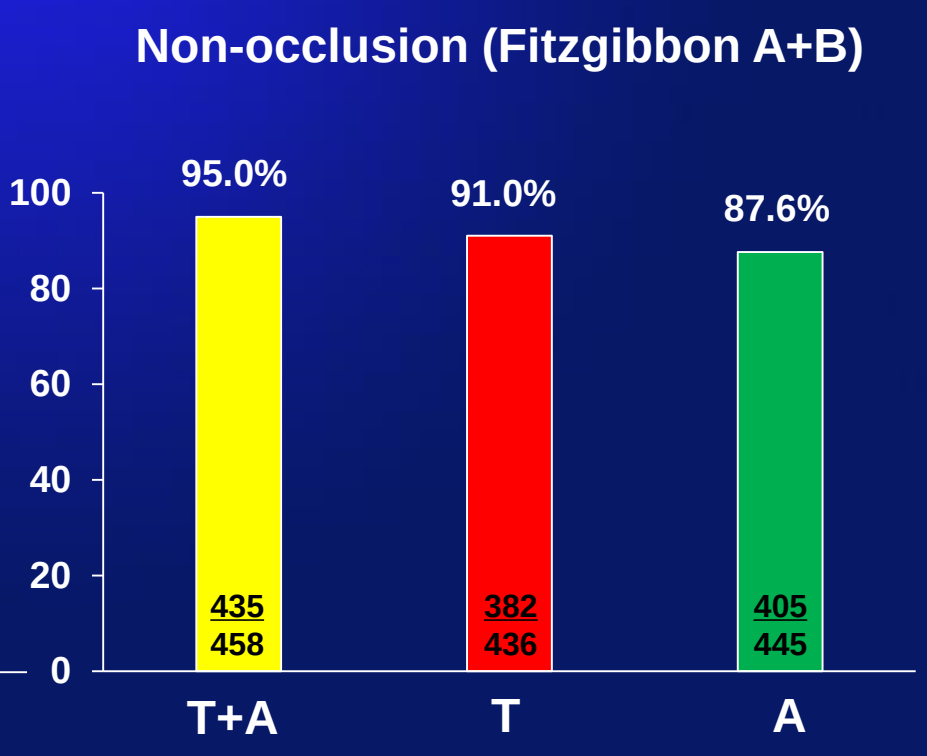
T vs A: Δ = 6.3% (–1.1, 13.7) *P* = .0962

T+A vs A: Δ = 9.3% (2.7, 16.0) *P* = .0060

T vs A: Δ = 5.4% (–1.5, 12.4) *P* = .1264

# SVG Outcomes at 1 year (PP)



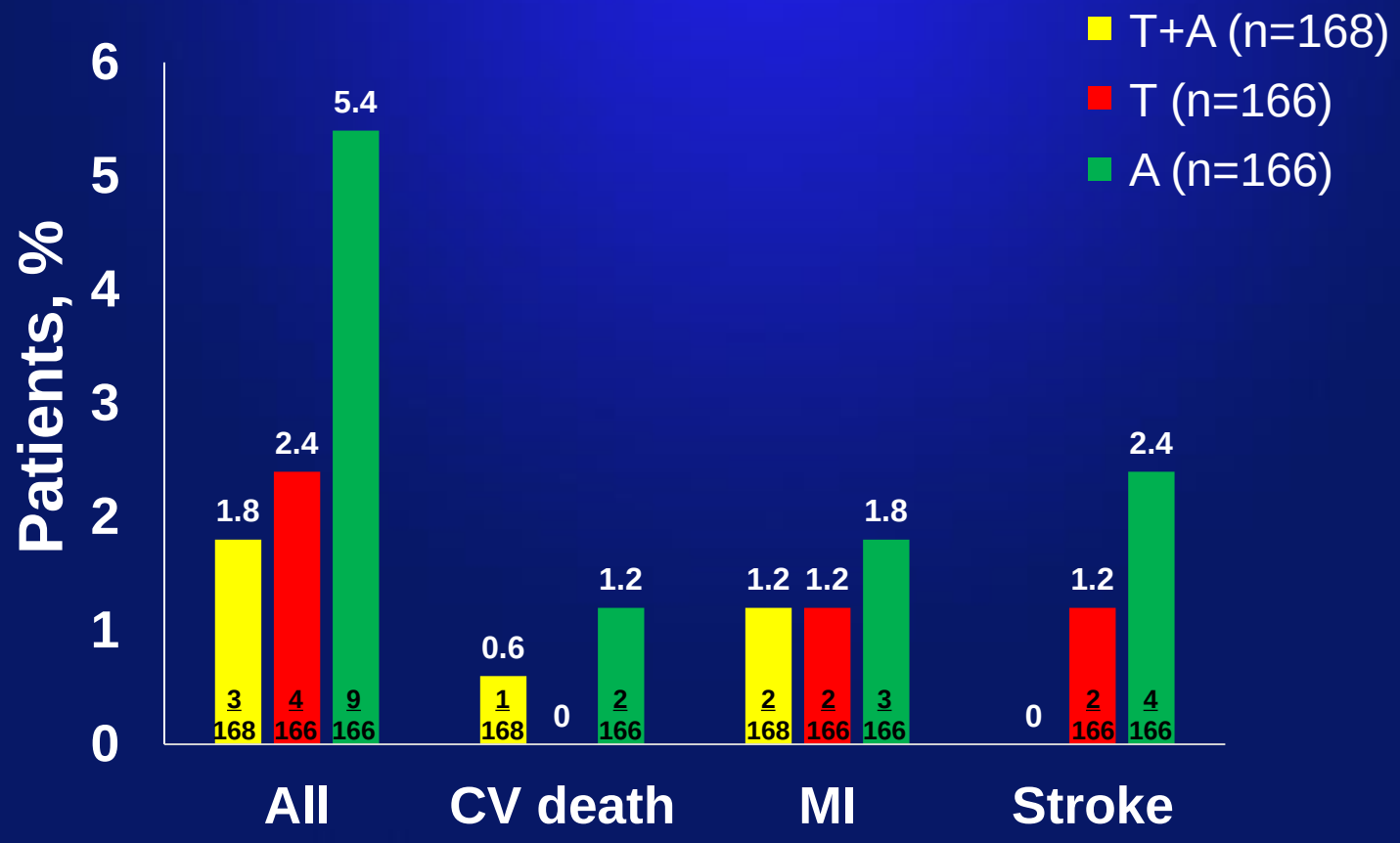

T+A vs A: Δ = 10.4% (4.7, 16.2) *P*=.0004

T vs A: Δ = 4.3% (-1.9, 10.7) *P*=.1719

T+A vs A: Δ = 7.4% (2.3, 12.4) *P*=.0045

T vs A: Δ = 3.4% (-2.1, 8.9) *P*=.2226

# MACE


T+A (n=168)
T (n=166)
A (n=166)
Patients, %
0
1
2
3
4
5
6
1.8
2.4
5.4
0.6
0
1.2
1.2
1.2
1.8
0
1.2
2.4
3/168
4/166
9/166
1/168
2/166
2/168
2/166
3/166
2/166
4/166
All
CV death
MI
Stroke

# Bleeding

| Bleeding Event, n (%) | T+A (n=168) | T alone (n=166) | A alone (n=166) |
|---|---|---|---|
| CABG-related | 1 (0.6) | 1 (0.6) | 0 |
| Non-CABG-related | 51 (30.4) | 20 (12.1) | 15 (9.0) |
| Major | 2 (1.2) | 1 (0.6) | 0 |
| Minor | 2 (1.2) | 0 | 2 (1.2) |
| Minimal | 48 (28.6) | 19 (11.4) | 13 (7.8) |
| Major bleeding[a] | 3 (1.8) | 2 (1.2) | 0 |

a. Major bleeding: CABG-related plus Non-CABG-related major

# Conclusions

- Ticagrelor plus aspirin combination therapy significantly improves SVG patency 1-year after CABG when compared with aspirin monotherapy without excess risk of major bleeding