

Reappraisal of Medina Classification on Bifurcation PCI in 2024

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Disclosure

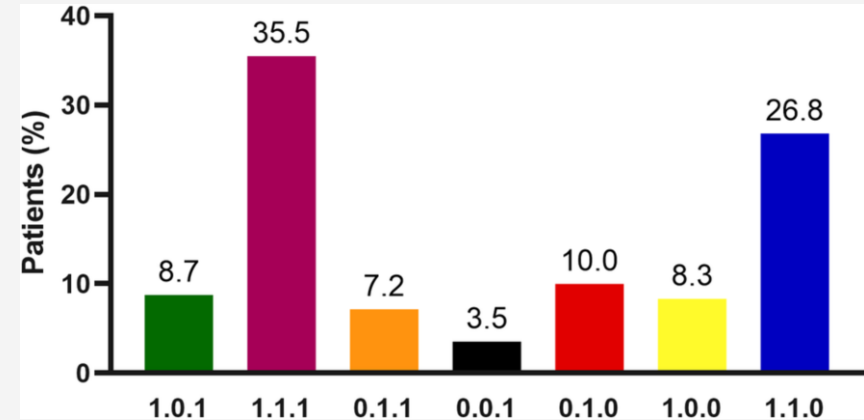
Speaker's name : Yoshinobu MURASATO

I have the following potential conflicts of interest to report:

Honoraria: Medtronic, Abbott Medical, Boston Scientific, Kaneka, Orbus Neich

e-Ultimaster

- 37,198 patients, 50 countries
- 4,003 coronary bifurcation lesions (CBL)
- Intracoronary imaging 12%
- Worse clinical outcome in Medina 0-0-1 as in 1-1-1

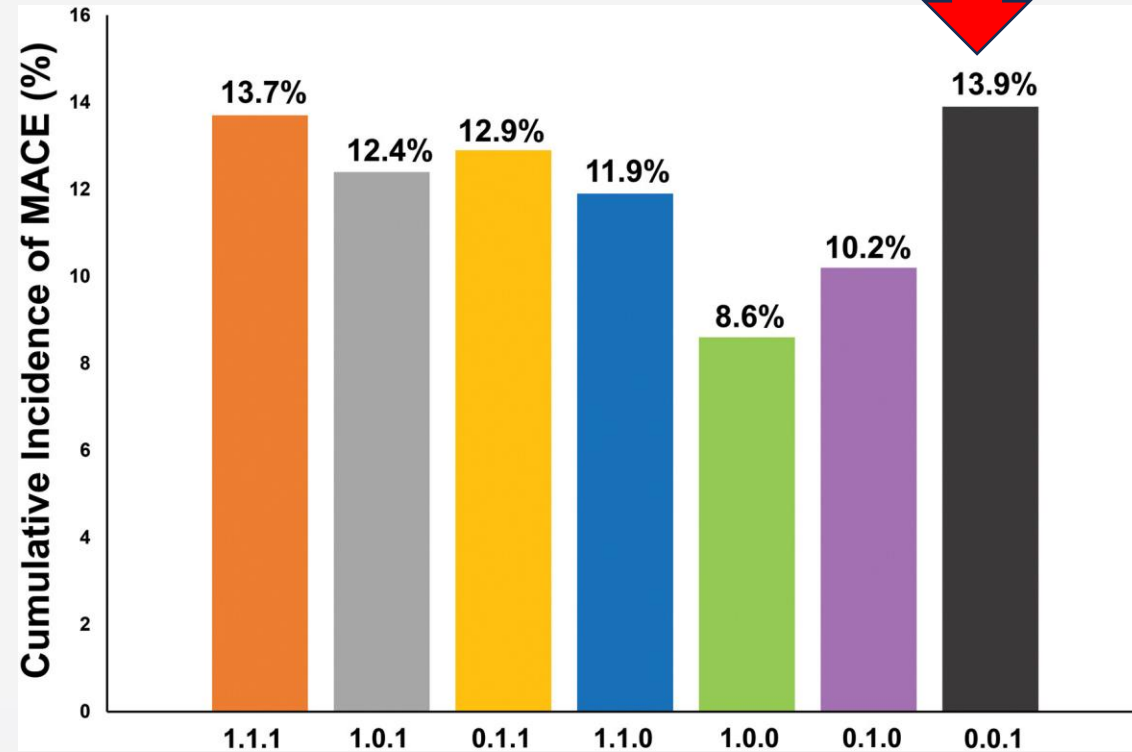
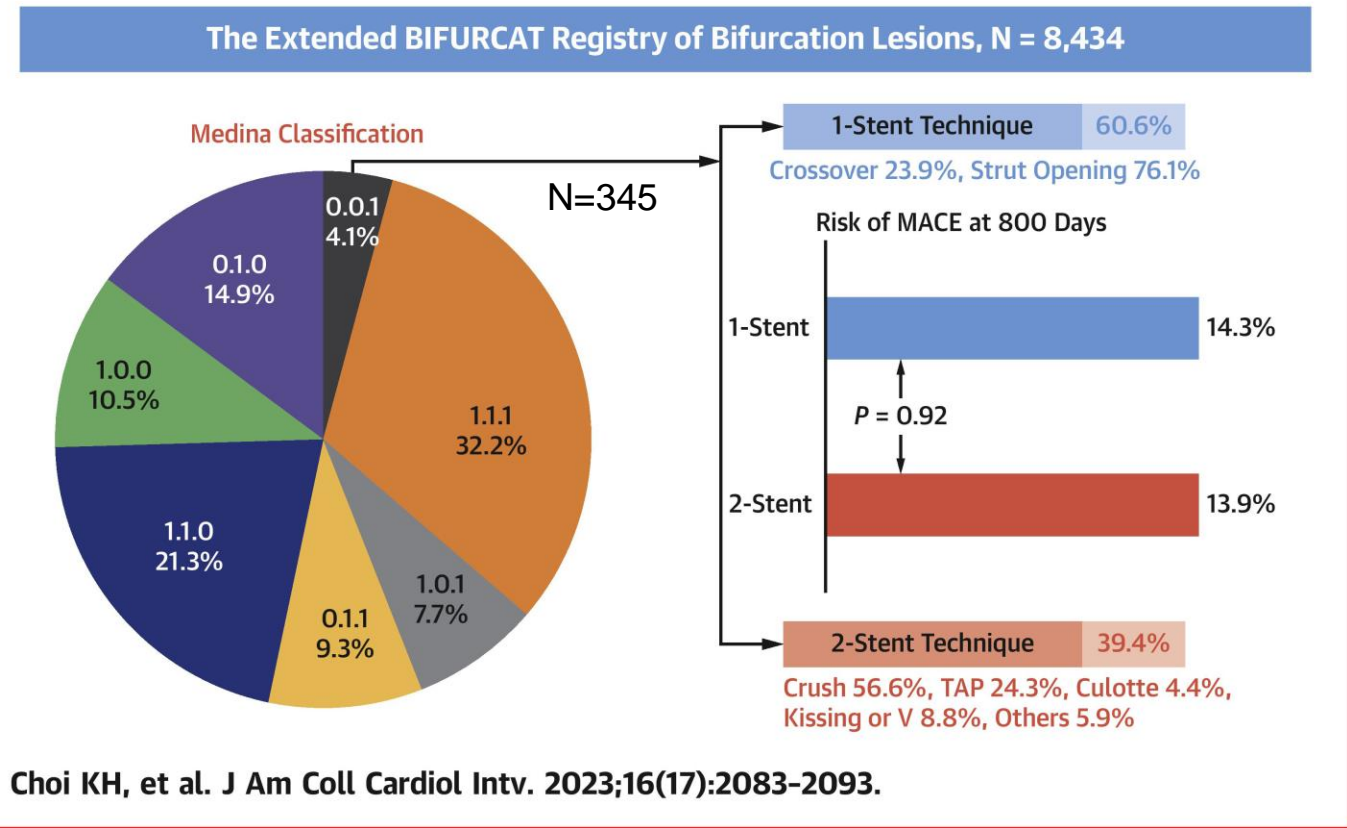


Mohamed MO et al. J Am Heart Assoc. 2022;11(17):e025459.

BIFURCAT

Integrated analysis of COBIS II, III (Korea) and RAIN registry (Italy)

CENTRAL ILLUSTRATION: Treatment Strategy for Bifurcation Lesion With Medina 0.0.1



Intracoronary imaging: 49%

Integrated analysis of Japanese Bifurcation studies

J-REVERSE¹
IVUS-guidance
300 cases

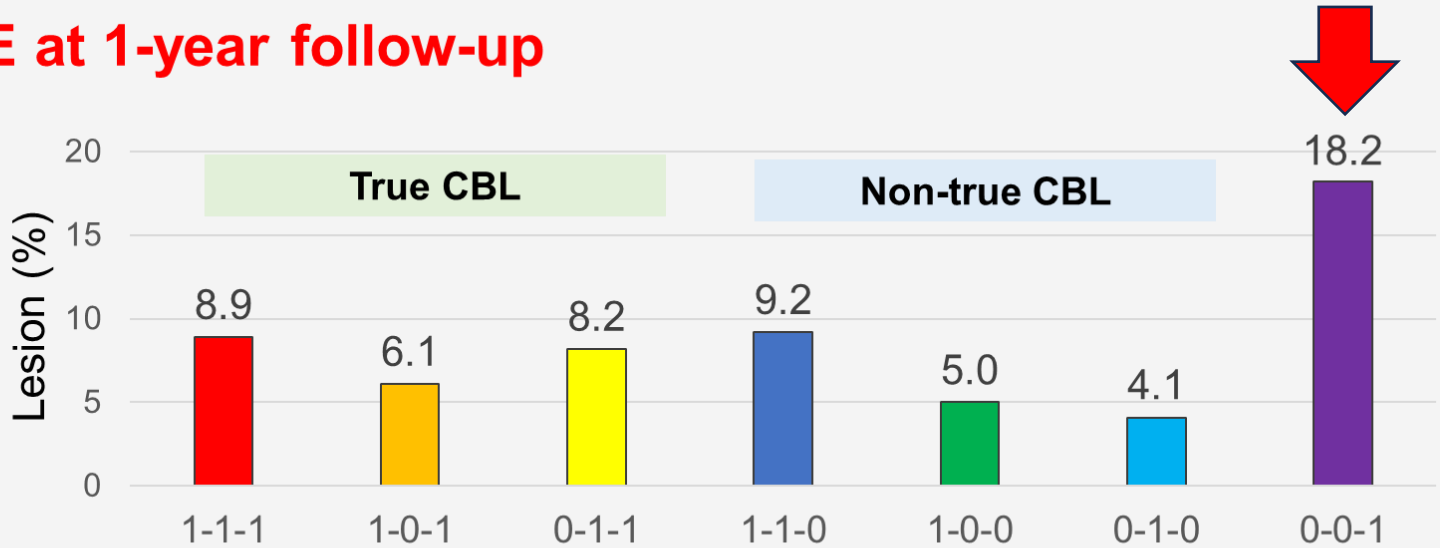
3D OCT Registry²
OCT-guidance
168 cases

PROPOT³
OCT-guidance
119 cases

Glider Registry⁴
IVUS /OCT guidance
201 cases

Integrated analysis
778 CBL cases
IVUS-guidance 397 (51%)
OCT-guidance 381 (49%)

MACE at 1-year follow-up

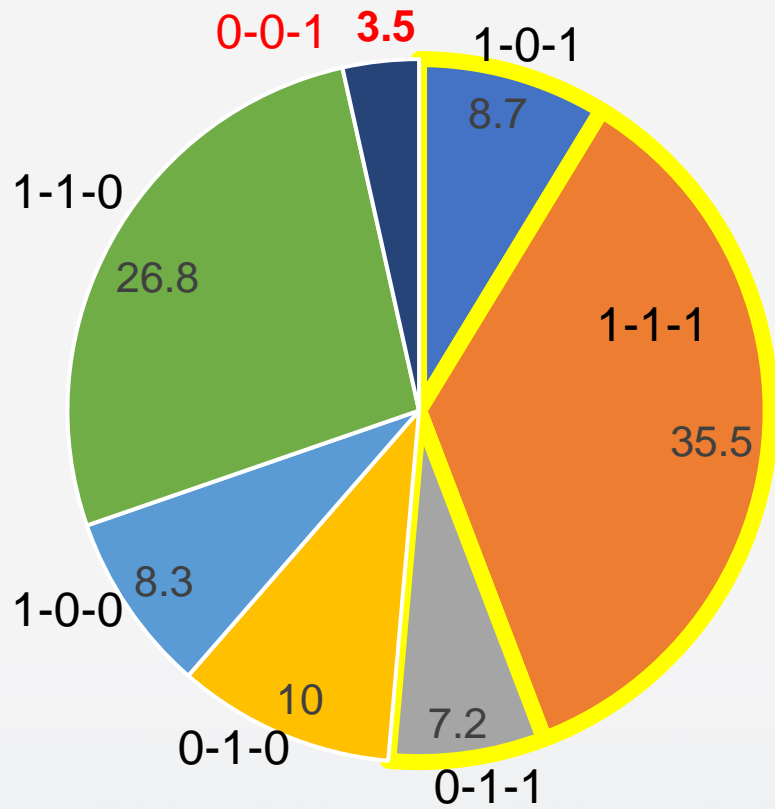


Hazard ratio vs. Medina 0-1-0 lesion

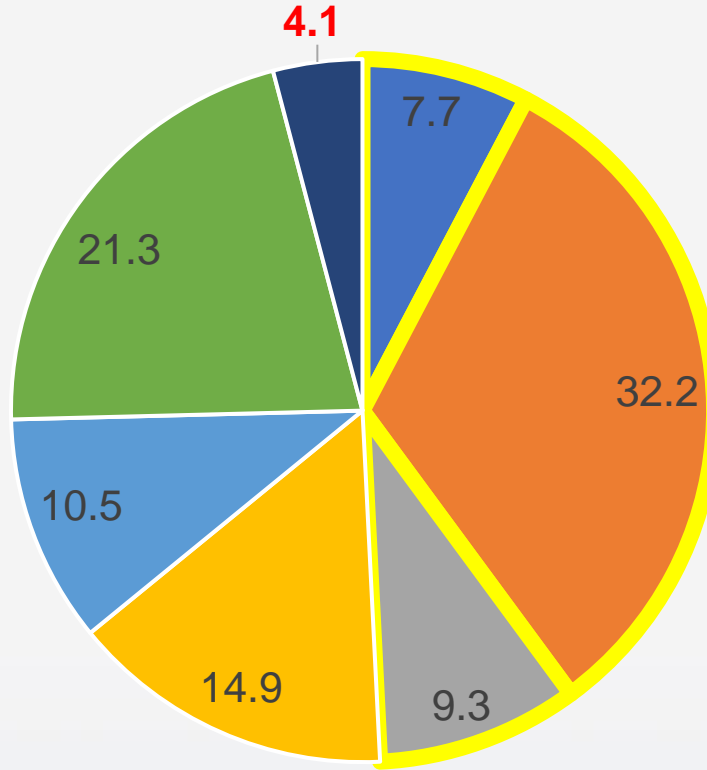
	Medina	Hazard ratio	95%CI		P-value
True CBL	1-1-1	1.87	0.79	4.44	0.16
	1-0-1	1.12	0.24	5.19	0.89
	0-1-1	2.03	0.78	5.29	0.15
Non-true CBL	1-1-0	1.87	0.79	4.45	0.16
	1-0-0	1.15	0.38	3.43	0.81
	0-0-1	4.14	1.27	13.50	0.02

Distribution of Medina classification

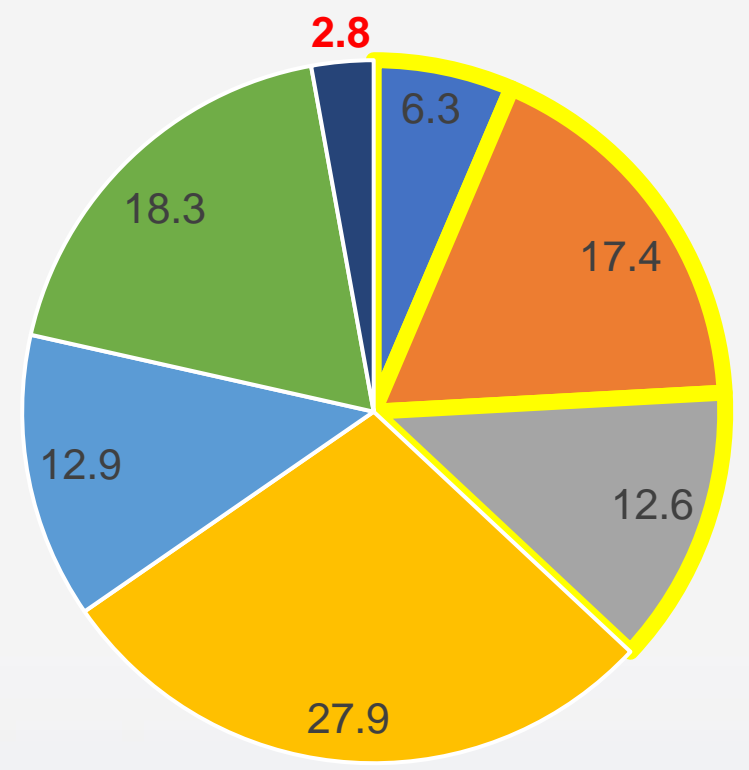
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Japanese registry



Intracoronary
imaging

12%

49%

100%

PCI procedure

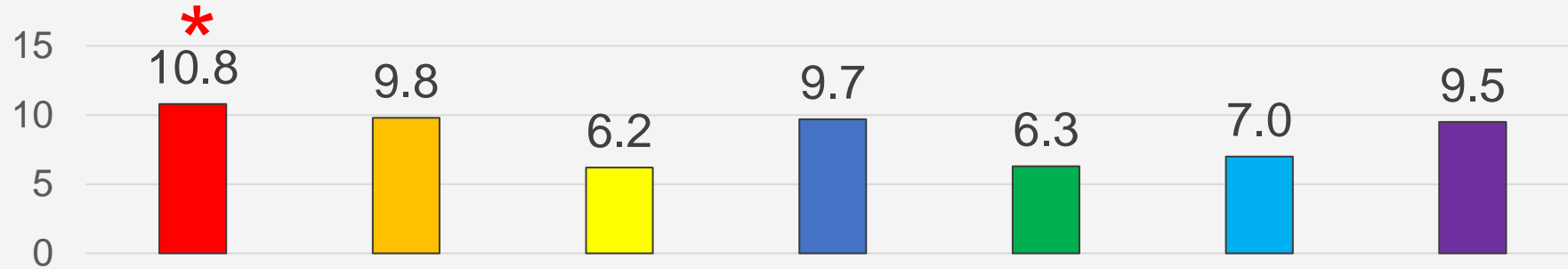
		e-Ultimaster	BIFURCAT	Japanese registry
2-stent	True CBL	37%		20%
	Non-true CBL	5%		3%
	0-0-1	12%	39%	9%
FKB or strut opening	True CBL			89%
	Non-true CBL			77%
	0-0-1		81%	86%
POT	True CBL	38%		45%
	Non-true CBL	32%		51%
	0-0-1	15%	31%	32%

More frequent 2-stent and FKB, and less POT in 0-0-1 lesion

MACE in Medina subclass

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All-cause death, any myocardial infarction, any revascularization

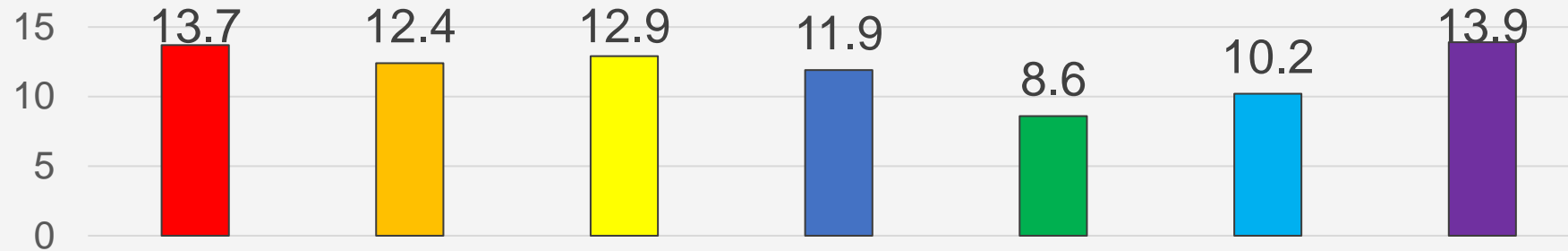


F/U

1-year

BIFURCAT

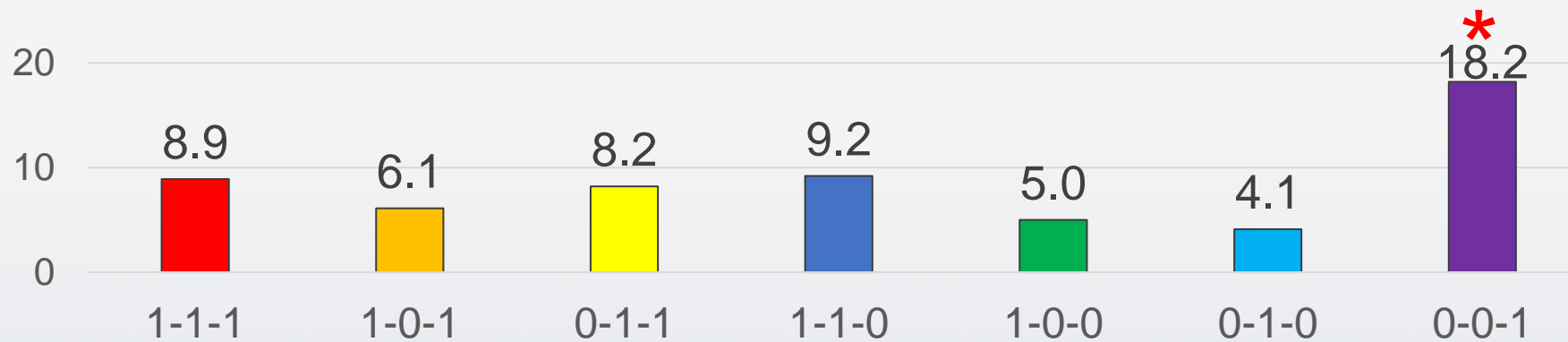
All-cause death, myocardial infarction, TVR, Stent thrombosis



800-day

Japanese registry

TLR, Myocardial infarction, Stent thrombosis, Cardiac death

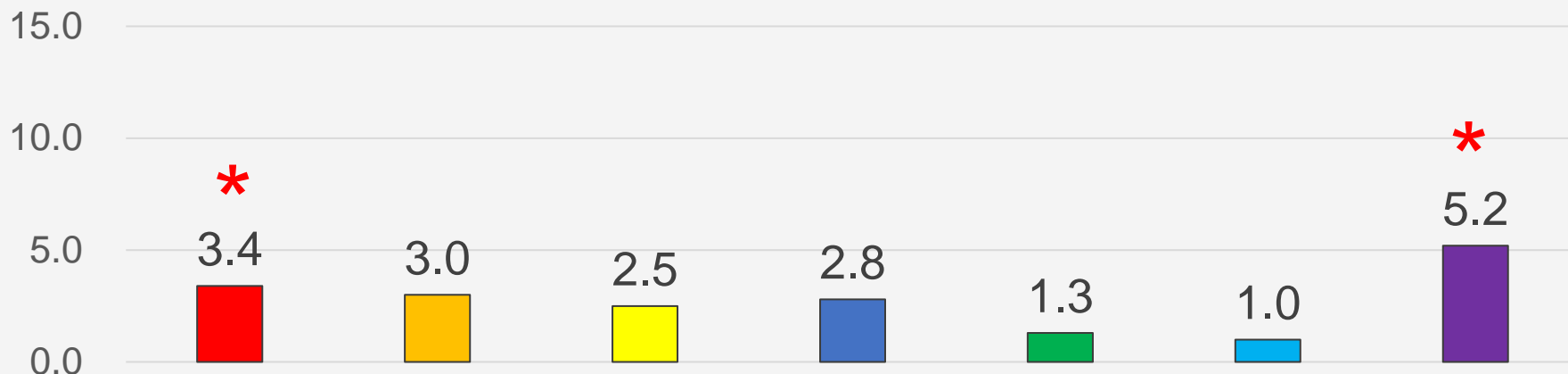


1-year

TLR in Medina subclass

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Clinical-driven TLR

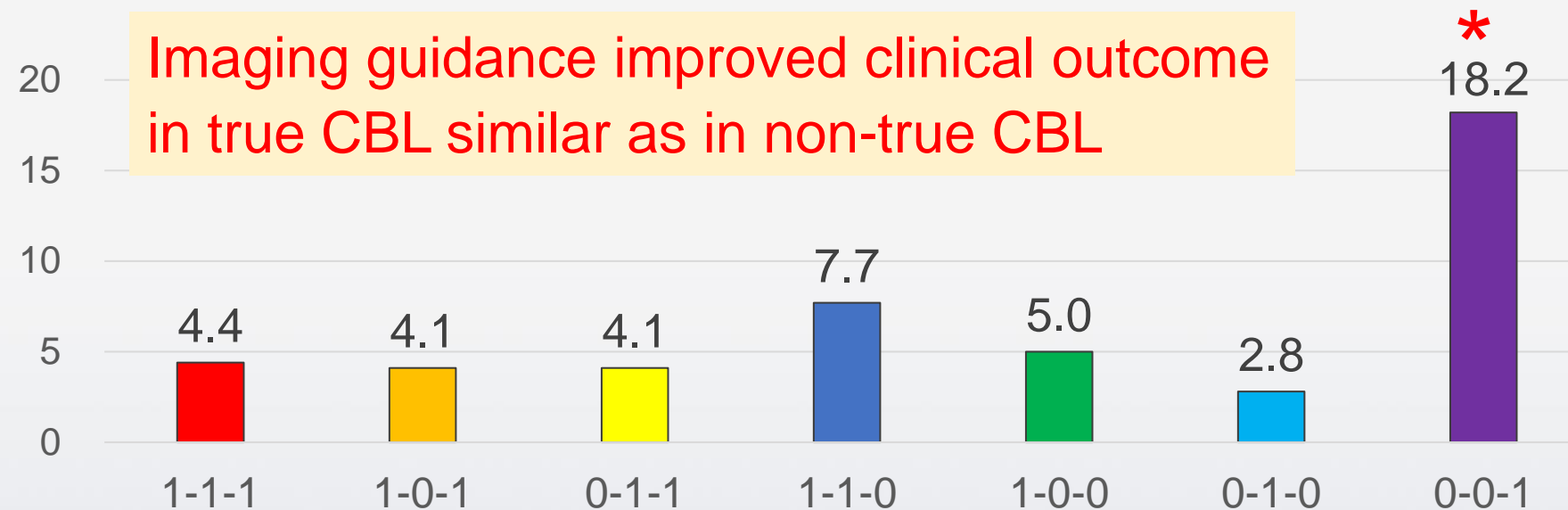


F/U

1-year

Japanese registry

TLR



1-year

Discussion

- Imaging guidance improved clinical outcome in true CBL similar as in non-true CBL
 - Accurate assessment of SB lumen expansion and dissection
 - Appropriate pre-treatment according to plaque morphology and distribution
 - Optimal device size selection
 - Less 2-stent deployment
- Worse clinical outcome in 0-0-1 lesion
 - Angiographic non-significant MV lesion includes moderate plaque
 - Similar PCI treatment as in true CBL
More 2-stent and FKB and less POT than in other non-true CBLs

Option in 0-0-1 lesion

1. Proximal MV – SB crossover stenting
more TLR in LM-LCX crossover vs. LM-LAD crossover (18.2% vs. 3.0%)
Naganuma T et al. Catheter Cardiovasc Interv. 82 (2013) 757–764.
2. Stent deployment by nailing the SB ostium
more TVR in LAD ostial nailing stent vs. LM-LAD crossover stenting
(21.0% vs. 5.6%)
Rigatelli G et al. Cardiovasc Revasc Med. 20 (2019) 1058–1062
3. DCB in 0-0-1 lesion
higher TLF rate vs. DCB in 0-1-0 lesion (14% vs. 6%)
Kleber FX et al. Clin Res Cardiol. 105 (2016) 613–621
Vaquerizo BJ et al. Interv Cardiol. 29 (2016) 285–292



Specific anatomical feature promoting poor PCI outcome

Possible mechanism of worse outcome in 0-0-1 lesion

- Overtreatment of invaluable or non-ischemic SB without confirmation of functional ischemia or perfusion territory
- Wide bifurcation angle between proximal MV and SB
More likelihood of rheological disturbance in SB
- Hinge motion in the bifurcation
- Angiographically non-significant MV with moderate plaque is ignored or injured during treatment with POBA.



- Prevent SB overtreatment
- Decrease stent number
- Care distal MV plaque injury

Conclusion

- Intra-coronary imaging contributed to reduce MACE in true CBL as in non-true CBL except for 0-0-1 lesion.
- Despite of less frequent needs for treatment (3-4%), 0-0-1 lesion remained higher risk of TLR even under the imaging guidance.

Thank you for your attention !