
5th iHEF CARD
The 5th Indonesian
Symposium on Heart Failure and
Cardiometabolic Disease
Indonesian Working Group
on Heart Failure
and Cardiometabolic Disease
WHFS
World Heart Failure Society
HEART FAILURE SOCIETY
(SINGAPORE)
Dyslipidemia and Heart Failure:
Current Evidence and Perspective of Use Lipid-Lowering Therapy
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Bandung
June, 12-14 2025
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Disclosure

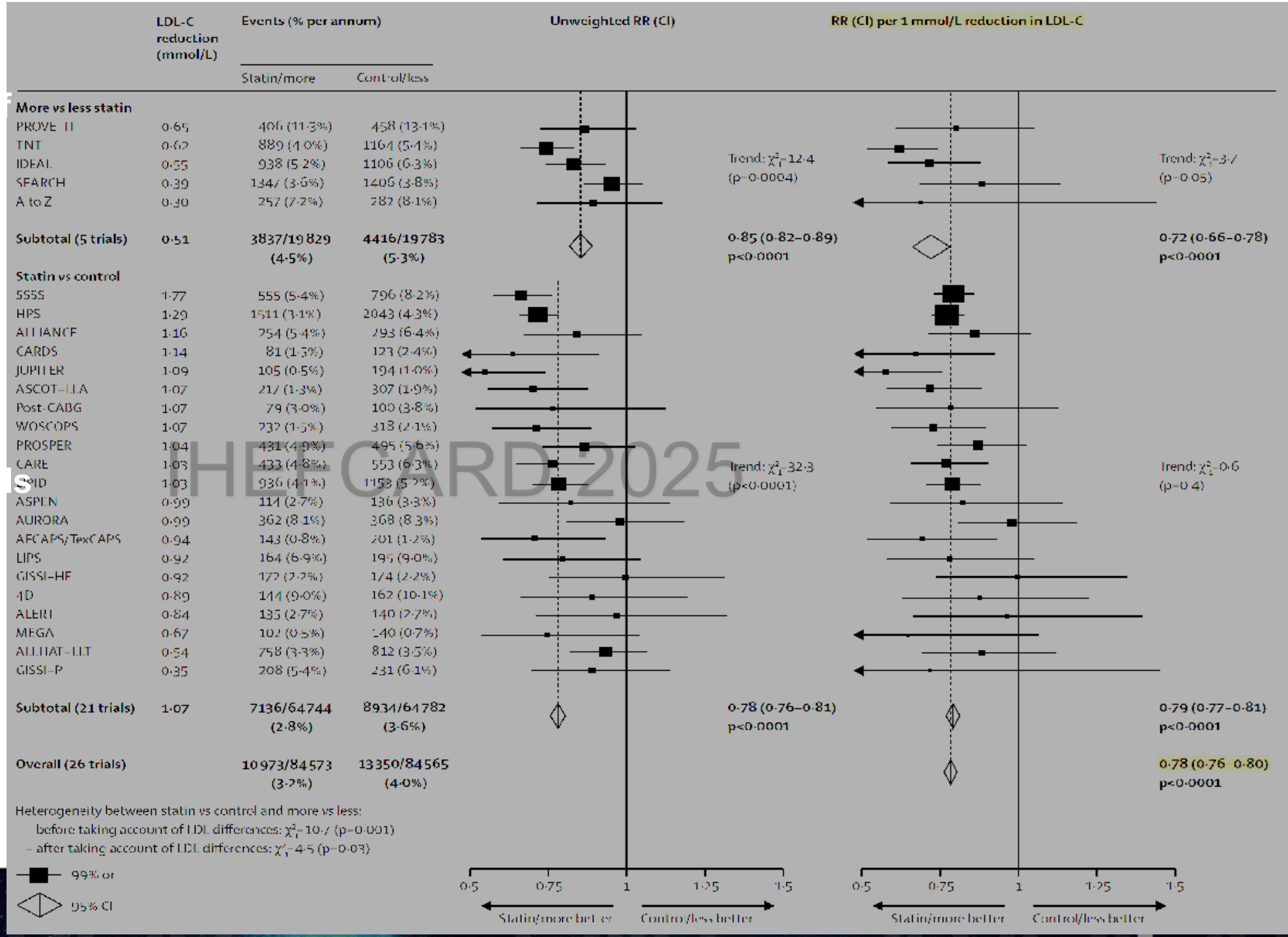
I have no actual or potential

conflict of interest in relation to

this presentation

The primary objective of treating dyslipidemia is to prevent atherosclerotic events in patients with high or very high CVD risk

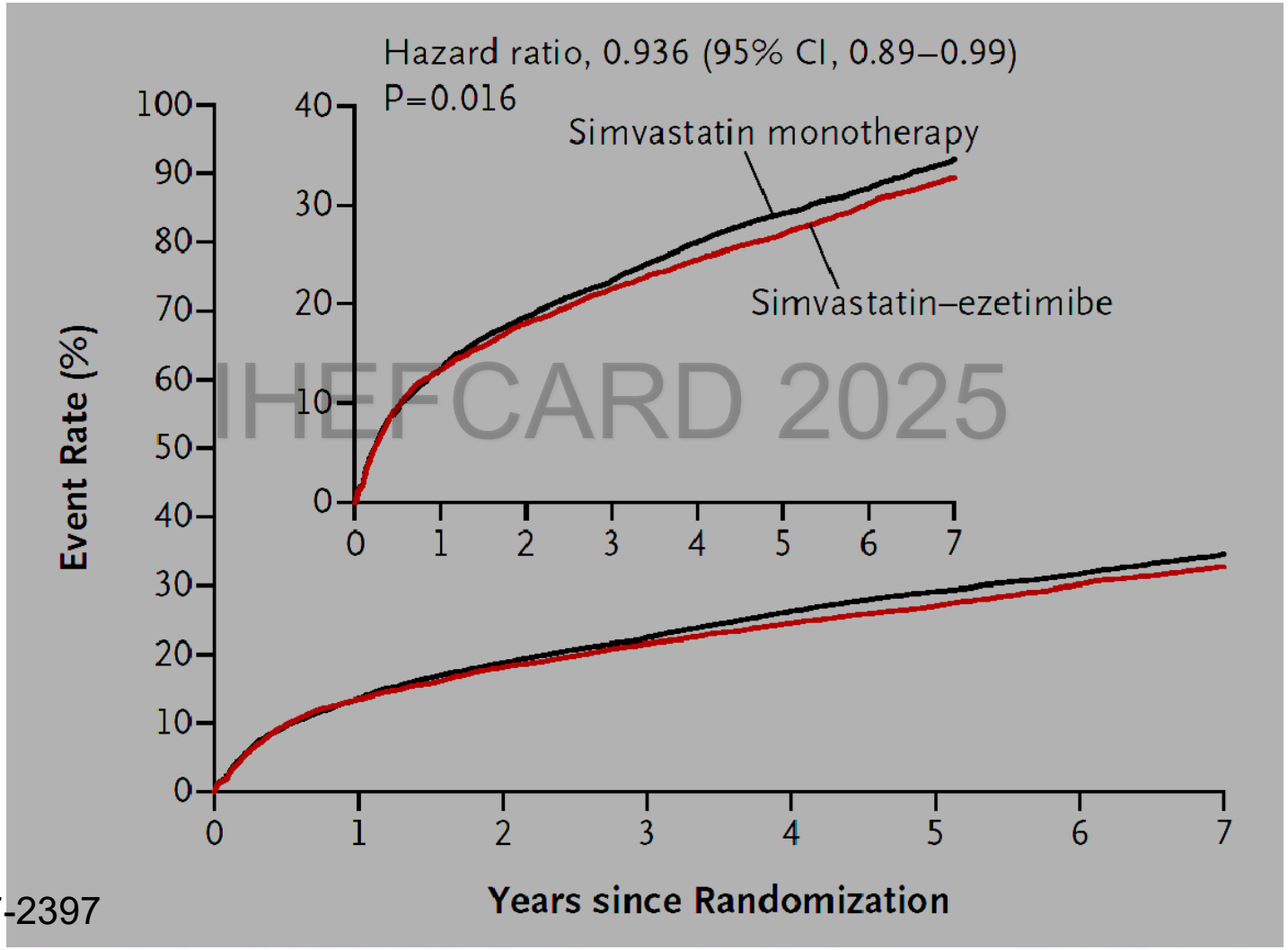
The 5th Indonesian Symposium on Heart Failure and Cardiometabolic Disease



Baigent C, et al.

Lancet 2005;366:1267–78.

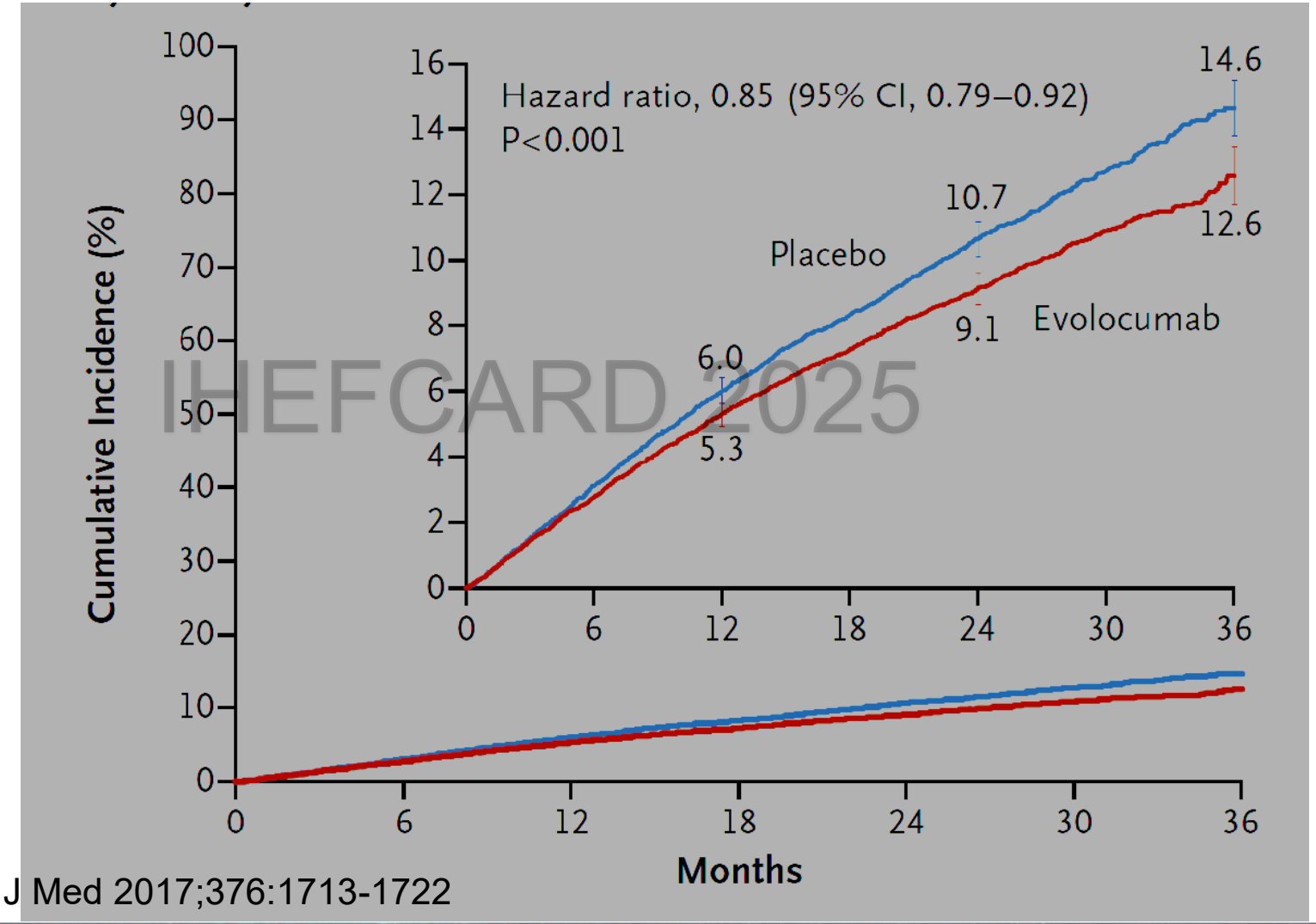
Reducing LDL-C to 53 mg/dl with statin and ezetimibe



Cannon CP, et al.

N Engl J Med 2015;372:2387-2397

Reducing LDL-C to 30 mg/dl with statin and PCSK9 inhibitor



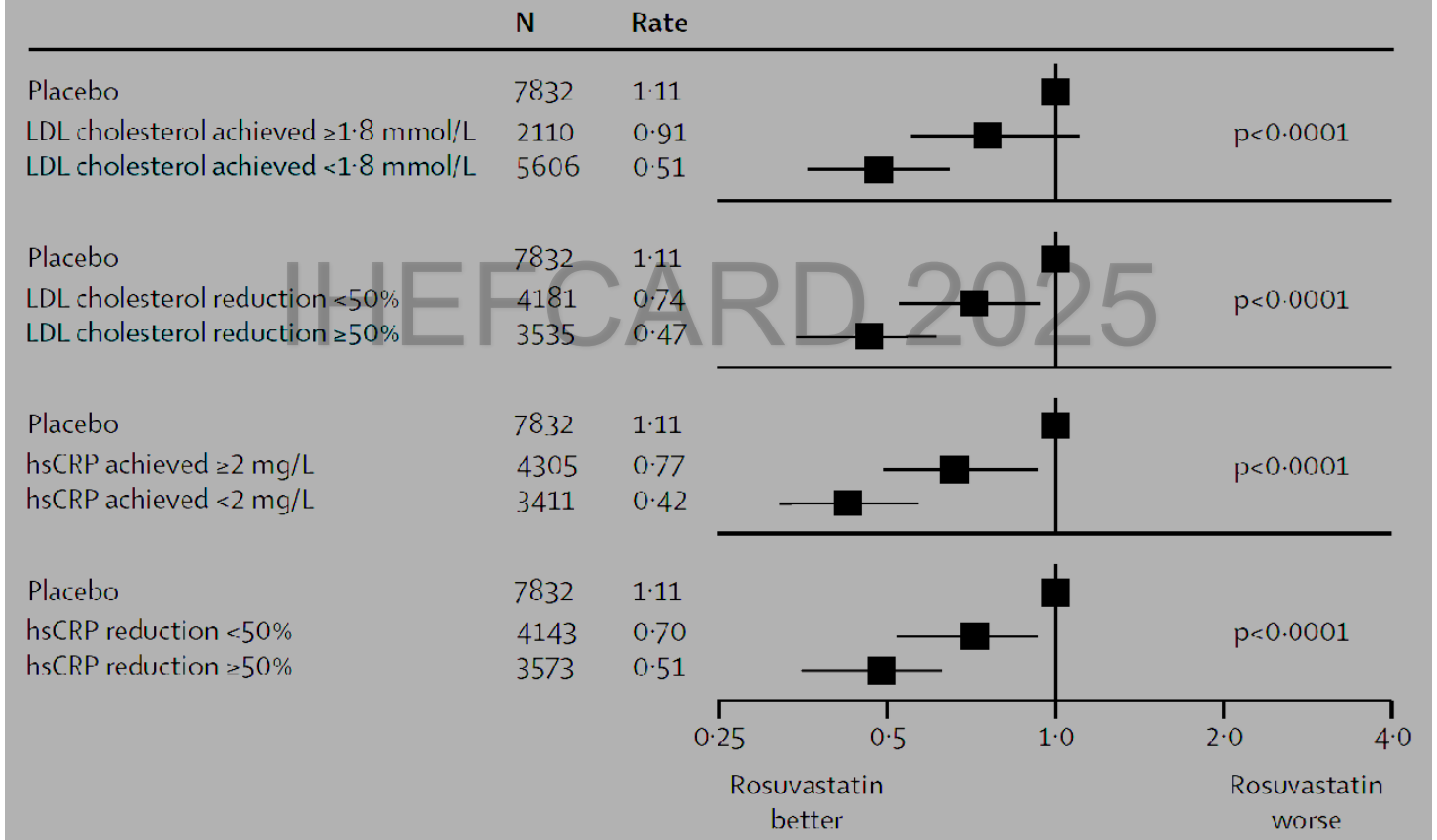
Sabatine MS, et al. N Engl J Med 2017;376:1713-1722

2024 ESC Guidelines for the management of chronic coronary syndromes

Ultimate LDL-C goal of <1.4 mmol/L (55 mg/dL) and a ≥50% reduction in LDL-C vs. baseline is recommended

Vrints C, Andreotti F, et al. Eur Heart J 2024, doi.10.1093/eurheartj/ehae177

Reduction in C-reactive protein and LDL cholesterol and cardiovascular event rates after initiation of rosuvastatin: a prospective study of the JUPITER trial



Ridker PM, et al. Lancet 2009; 373: 1175–82

2019 ESC/EAS Guidelines for the management of dyslipidaemias: *lipid modification to reduce cardiovascular risk*

In patients at high risk, an LDL-C reduction of ≥50% from baseline$_d$ and an LDL-C goal of <1.8 mmol/L (<70 mg/dL) are recommended.

Mach F, Baigent C, et al. Eur Heart J 2020;41:111188

Ezetimibe Added to Statin Therapy after Acute Coronary Syndromes

Christopher P. Cannon, M.D., Michael A. Blazing, M.D., Robert P. Giugliano, M.D., Amy McCagg, B.S., Jennifer A. White, M.S., Pierre Theroux, M.D., Harald Darius, M.D., Basil S. Lewis, M.D., Ton Oude Ophuis, M.D., Ph.D., J. Wouter Jukema, M.D., Ph.D., Gaetano M. De Ferrari, M.D., Witold Ruzyllo, M.D., Paul De Lucca, Ph.D., KyungAh Im, Ph.D., Erin A. Bohula, M.D., D.Phil., Craig Reist, Ph.D., Stephen D. Wiviott, M.D., Andrew M. Tershakovec, M.D., M.P.H., Thomas A. Musliner, M.D., Eugene Braunwald, M.D., and Robert M. Califf, M.D., for the IMPROVE-IT Investigators*

Baseline LDL-C:

93.8 mg/dl

Evolocumab and Clinical Outcomes in Patients with Cardiovascular Disease

Marc S. Sabatine, M.D., M.P.H., Robert P. Giugliano, M.D., Anthony C. Keech, M.D., Narimon Honarpour, M.D., Ph.D., Stephen D. Wiviott, M.D., Sabina A. Murphy, M.P.H., Julia F. Kuder, M.A., Huei Wang, Ph.D., Thomas Liu, Ph.D., Scott M. Wasserman, M.D., Peter S. Sever, Ph.D., F.R.C.P., and Terje R. Pedersen, M.D., for the FOURIER Steering Committee and Investigators*

Baseline LDL-C:

92 mg/dl

Start treatment with high intensity statin

High intensity statin therapy (mg)	Moderate intensity statin therapy (mg)	Low intensity statin therapy (mg)
Daily dose lowers LDL-C on average, by approx. ≥50%	Daily dose lowers LDL-C on average, by approx. 30% to <50%	Daily dose lowers LDL-C on average, by approx. <30%
Atorvastatin 40-80 Rosuvastatin 20-40	Atorvastatin 10-20 Rosuvastatin 5-10 Simvastatin 20-40 Pravastatin 40-80 Lovastatin 40 Fluvastatin XL 80 Fluvastatin 40 bid Pitavastatin 2-4	Simvastatin 10 Pravastatin 10-20 Lovastatin 20 Fluvastatin 20-40 Pitavastatin 1

Donald M. Lloyd-Jones DM, Morris PB, et al. JACC 2016;68:92-125

Intensity of lipid lowering treatment

Treatment	Average LDL-C reduction
Moderate intensity statin	≈ 30%
High intensity statin	≈ 50%
High intensity statin plus ezetimibe	≈ 65%
PCSK9 inhibitor	≈ 60%
PCSK9 inhibitor plus high intensity statin	≈ 75%
PCSK9 inhibitor plus high intensity statin plus ezetimibe	≈ 85%

Mach F, Baigent C, et al. Eur Heart J 2020;41:111-188

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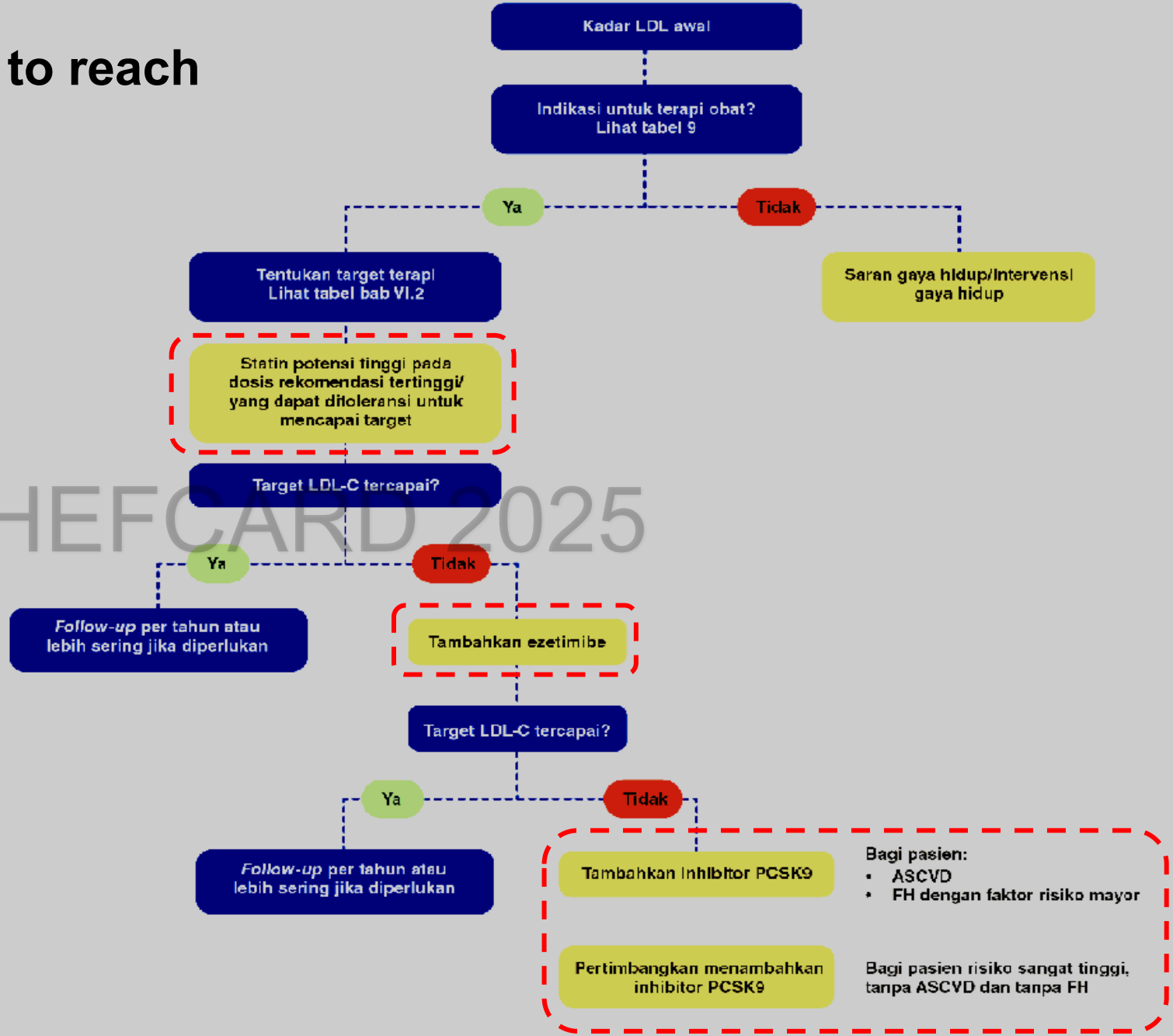
LDL-C lowering effect of moderate intensity statin plus ezetimibe:

LDL-C is reduced to 53 mg/dl but the reduction is less than 50% from baseline

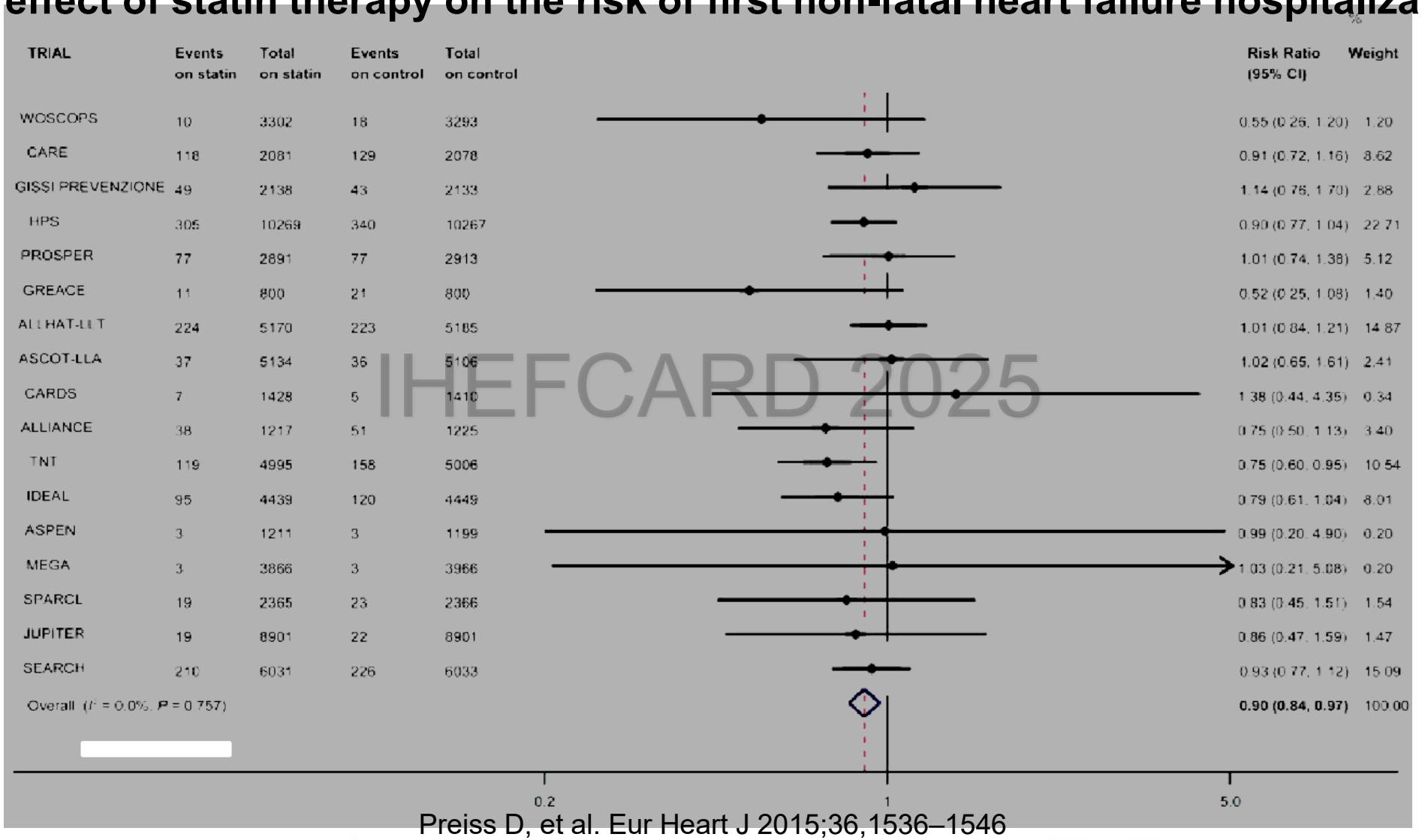
Cannon CP, et al. N Engl J Med 2015;372:2387-2397

Stepwise approach to reach LDL-C goal



The benefit of statin and ezetimibe on the prevention of new-onset heart failure

The effect of statin therapy on the risk of first non-fatal heart failure hospitalization



TRIAL	Events on statin	Total on statin	Events on control	Total on control	Risk Ratio (95% CI)	Weight
WOSCOPS	10	3302	18	3293	0.55 (0.25, 1.20)	1.20
CARE	118	2081	129	2078	0.91 (0.72, 1.16)	8.62
GISSI PREVENZIONE	49	2138	43	2133	1.14 (0.76, 1.70)	2.88
HPS	305	10269	340	10267	0.90 (0.77, 1.04)	22.71
PROSPER	77	2891	77	2913	1.01 (0.74, 1.38)	5.12
GREACE	11	800	21	800	0.52 (0.25, 1.08)	1.40
ALLHAT-LLT	224	5170	223	5185	1.01 (0.84, 1.21)	14.87
ASCOT-LLA	37	5134	36	5106	1.02 (0.65, 1.61)	2.41
CARDS	7	1428	5	1410	1.38 (0.44, 4.35)	0.34
ALLIANCE	38	1217	51	1225	0.75 (0.50, 1.13)	3.40
TNT	119	4995	158	5006	0.75 (0.60, 0.95)	10.54
IDEAL	95	4439	120	4449	0.79 (0.61, 1.04)	8.01
ASPEN	3	1211	3	1199	0.99 (0.20, 4.90)	0.20
MEGA	3	3866	3	3966	1.03 (0.21, 5.08)	0.20
SPARCL	19	2365	23	2366	0.83 (0.45, 1.51)	1.54
JUPITER	19	8901	22	8901	0.86 (0.47, 1.59)	1.47
SEARCH	210	6031	226	6033	0.93 (0.77, 1.12)	15.09
Overall (I^2 = 0.0%, P = 0.757)					**0.90 (0.84, 0.97)**	100.00

0.2 1 5.0

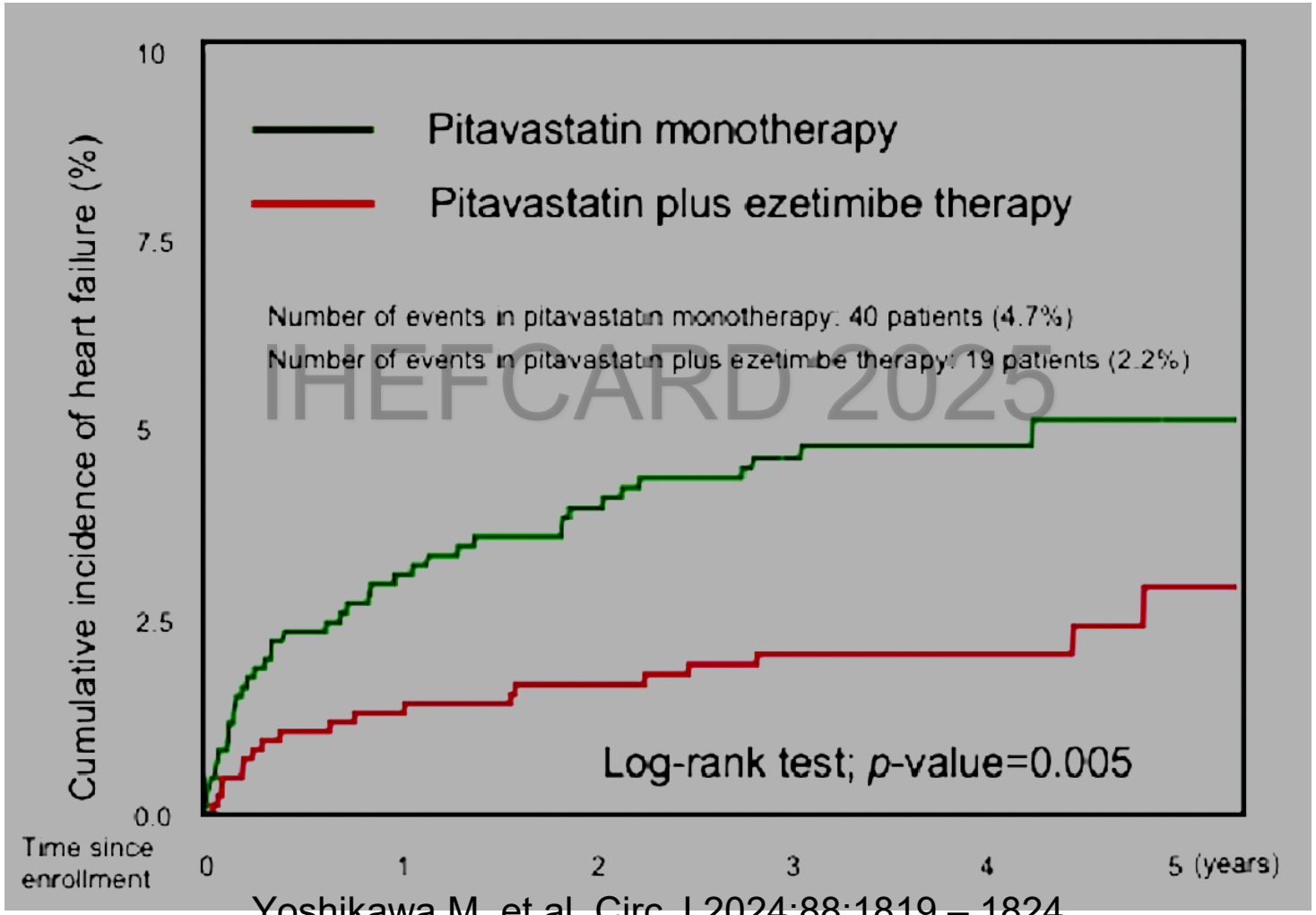
Preiss D, et al. Eur Heart J 2015;36,1536–1546

2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

Treatment with statins is recommended in patients at high risk of CV disease or with CV disease in order to prevent or delay the onset of HF, and to prevent HF hospitalizations.[291,292]	I	A

McDonagh TA, Metra M, et al. Eur Hear J 2021;42:3599–3726

Addition of Ezetimibe to Intensive Lipid-Lowering Therapy Is Associated With a Lower Incidence of Heart Failure in Patients With Acute Coronary Syndrome



Yoshikawa M, et al. Circ J 2024;88:1819 – 1824

Evolocumab and Clinical Outcomes in Patients with Cardiovascular Disease

There were reductions of 21 to 27% in the risk of myocardial infarction, stroke, and coronary revascularization.

But

No observed effect on the rates of cardiovascular death or hospitalization for worsening heart failure.

Sabatine MS, et al. N Engl J Med 2017, DOI: 10.1056/NEJMoa1615664

LDL-C lowering is effective to lower atherosclerotic events in patients with ASCVD or high CVD risk but not in those with heart failure

Effect of rosuvastatin in patients with chronic heart failure (the GISSI-HF trial): a randomised, double-blind, placebo-controlled trial

Tavazzi L, et al. Lancet 2008;372:1223-30.

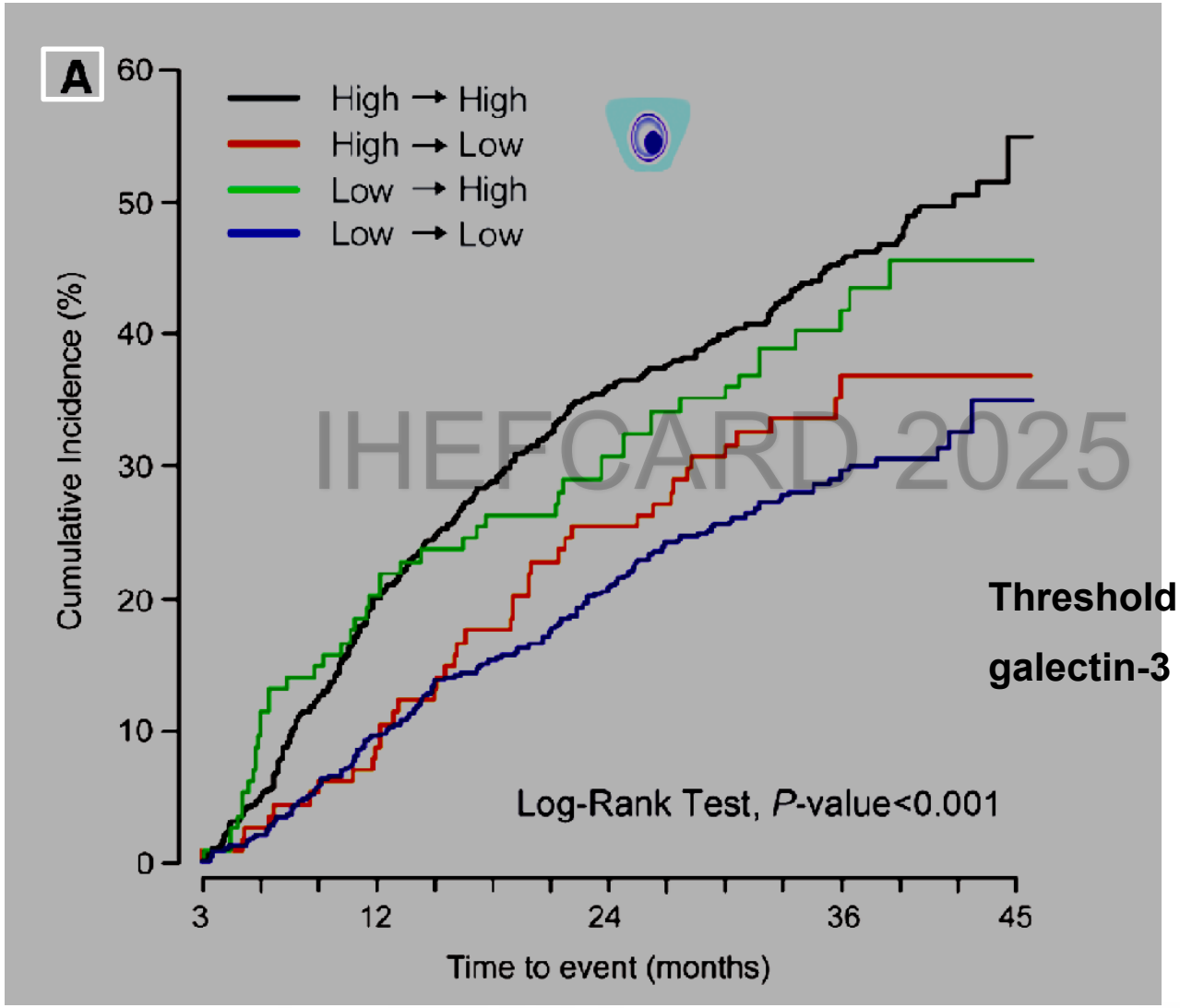
Rosuvastatin in Older Patients with Systolic Heart Failure

Kjekshus J, et al. N Engl J Med 2007;357:2248-61

Variable	Placebo (N=2497)		Rosuvastatin (N=2514)		Hazard Ratio (95% CI)	P Value
	No. of Patients	Event Rate	No. of Patients	Event Rate		
Outcome						
Fatal event						
Death from cardiovascular causes§	593	9.6	581	9.3	0.97 (0.87–1.09)	0.60
Sudden death	327	5.3	316	5.0	0.96 (0.82–1.12)	0.57
In primary outcome	284		284			
In coronary events	283		272			
Worsening heart failure	191	3.1	193	3.1	1.00 (0.82–1.22)	1.00
In primary outcome	157		161			
Myocardial infarction§	9	0.2	15	0.2		
In primary outcome	8		9			
In coronary events	8		9			
Stroke§¶	32	0.5	35	0.6		
In primary outcome	11		14			

Kjekshus J, et al. N Engl J Med 2007;357:2248-61

Changes in Galectin-3 and Outcome in Heart Failure



Threshold value of galectin-3 = 17.8 ng/ml

van der Velde AR, et al. Circ Heart Fail. 2013;6:219-226

Effect of Rosuvastatin on Repeat Heart Failure Hospitalizations

The CORONA Trial
(Controlled Rosuvastatin Multinational Trial in Heart Failure)

When repeat events were included, rosuvastatin was shown to reduce the risk of HFH by approximately 15% to 20%, equating to approximately 76 fewer admissions per 1,000 patients treated over a median 33 months of follow-up.

Rogers JK, et al. J Am Coll Cardiol HF 2014;2:289–97

Initiation of Statins for Primary Prevention in Heart Failure With Preserved Ejection Fraction

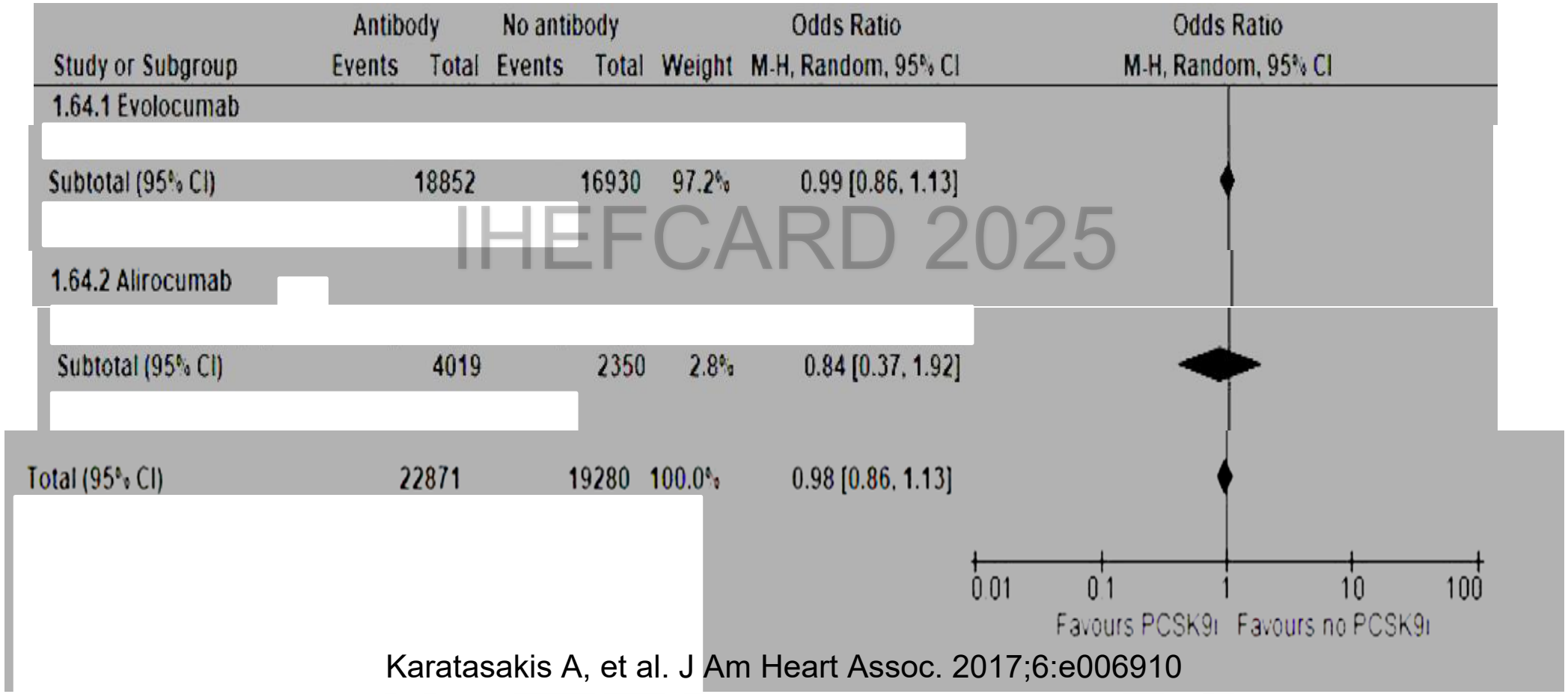
Ariela R. Orkaby, MD, MPH,[a,b,c,*] Parag Goyal, MD,[d,*] Brian Charest, MS, MPH,[b] Saadia Qazi, DO, MPH,[b] Shamlan Sheikh, MD,[b,c] Sanjiv Shah, MD,[f] J. Michael Gaziano, MD, MPH,[b,c] Luc Djousse, MD, ScD,[b,c] David Gagnon, MD, MPH, PhD,[b,g,†] Jacob Joseph, MBBS, MD[b,h,i,†]

New statin use was associated with reduced all-cause mortality, MACE, and hospitalization in Veterans with HFpEF without prevalent ASCVD.

JACC Adv 2024;3:100869

Effect of PCSK9 inhibitors on congestive heart failure exacerbation:

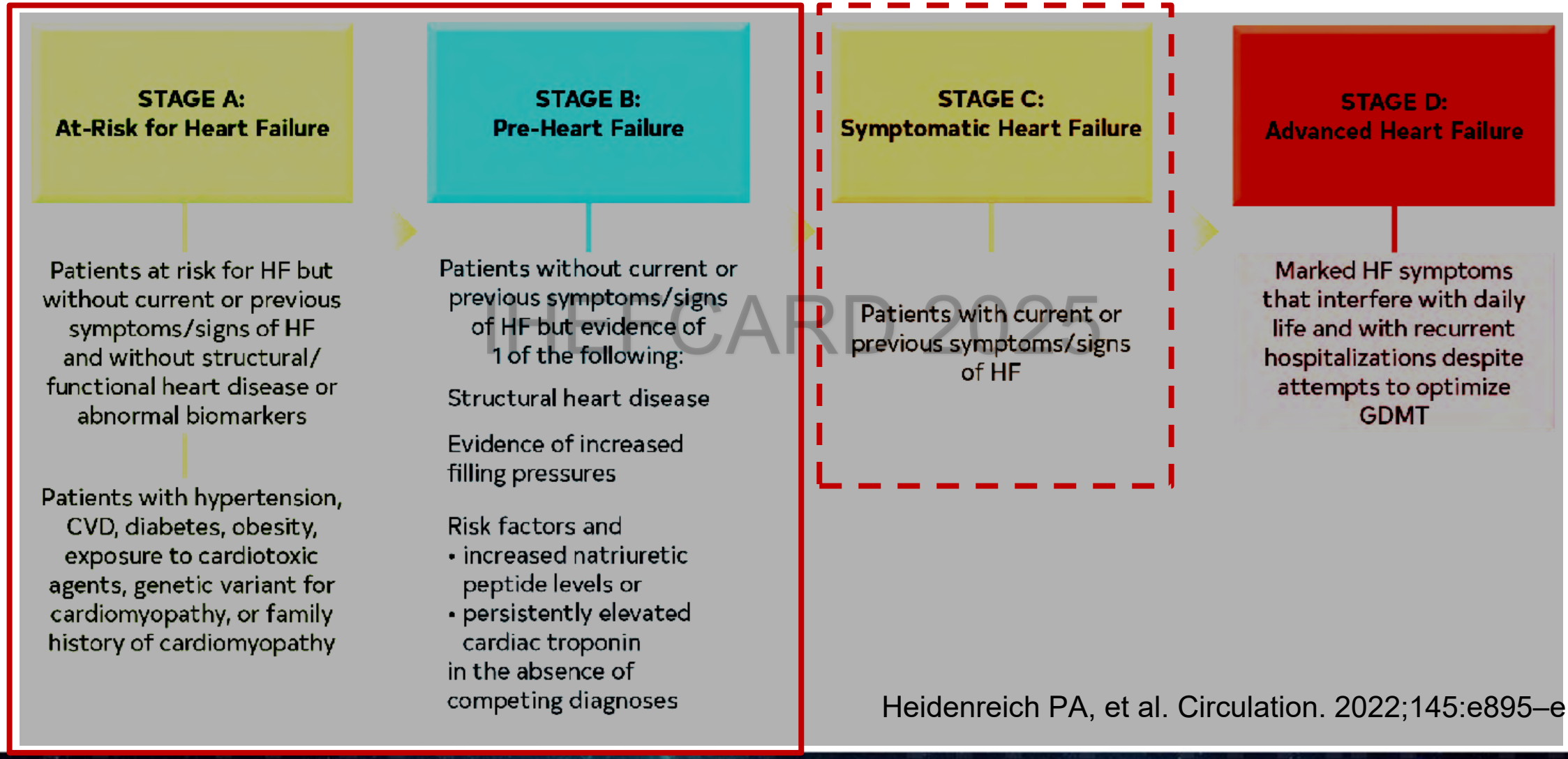
A meta-analysis of 35 randomized controlled trials



Karatasakis A, et al. J Am Heart Assoc. 2017;6:e006910

Take-home message

ACC/AHA Stages of HF



Heidenreich PA, et al. Circulation. 2022;145:e895–e1032

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