SATURN:
Effect of two intensive statin regimens on progression of coronary disease

Kindly supplied by Prof. Stephen Nicholls as an educational resource for PCSK9 Forum

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Nicholls SJ, Ballantyne CM, Barter et al.
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PCSK9FORUM

Statins: impact on plaque

- Statins have consistently reduced cardiovascular event rates in large randomized controlled clinical trials.
- Imaging studies have shown that statins have a favorable effect on disease progression.
- The effects on plaque burden appear to correlate with both lowering of LDL-C and raising of HDL-C.
- However, no study has compared the effects of maximal dosages of the most efficacious statin regimens on progression of coronary atherosclerosis.

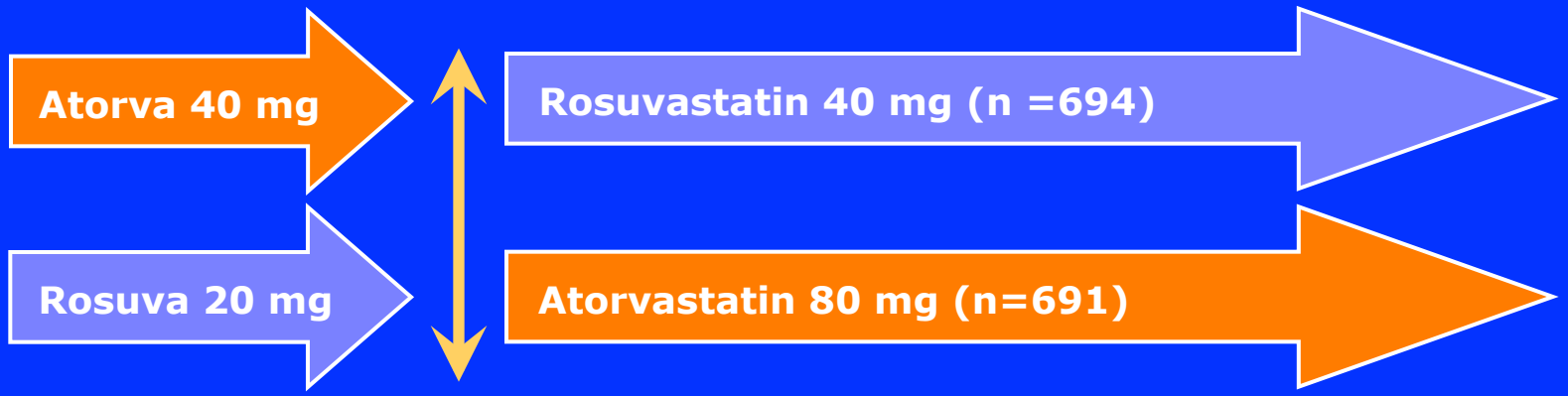
Aim of SATURN

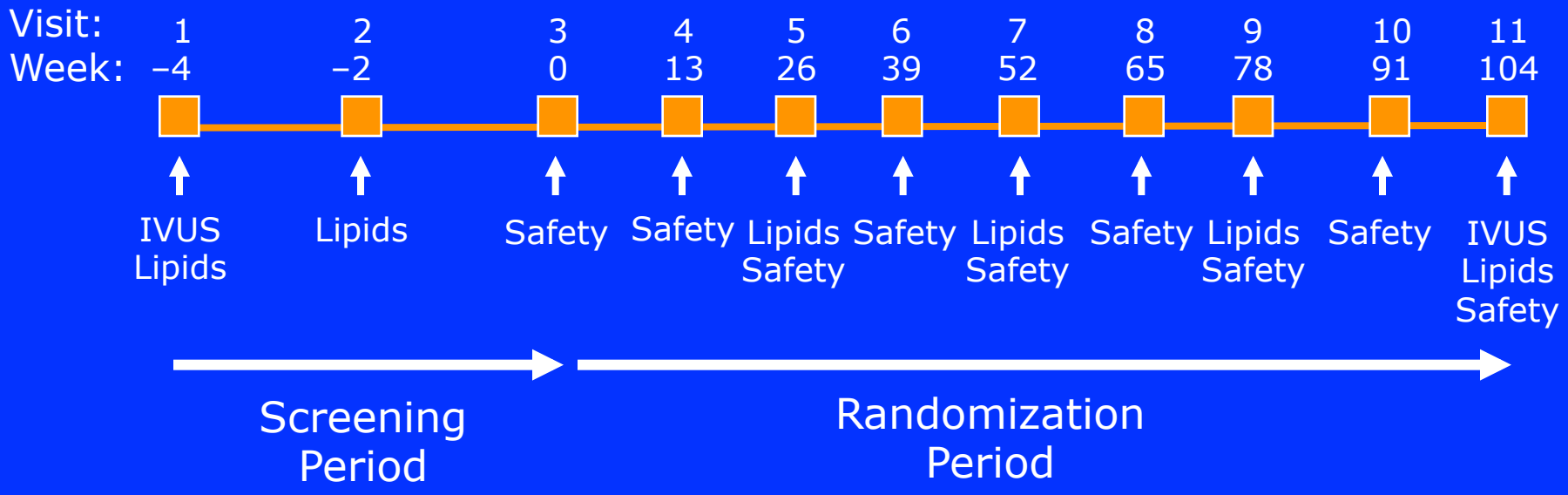
To compare the effects of rosuvastatin 40 mg versus atorvastatin 80 mg on progression of coronary atherosclerosis assessed by intravascular ultrasound.

Study Design

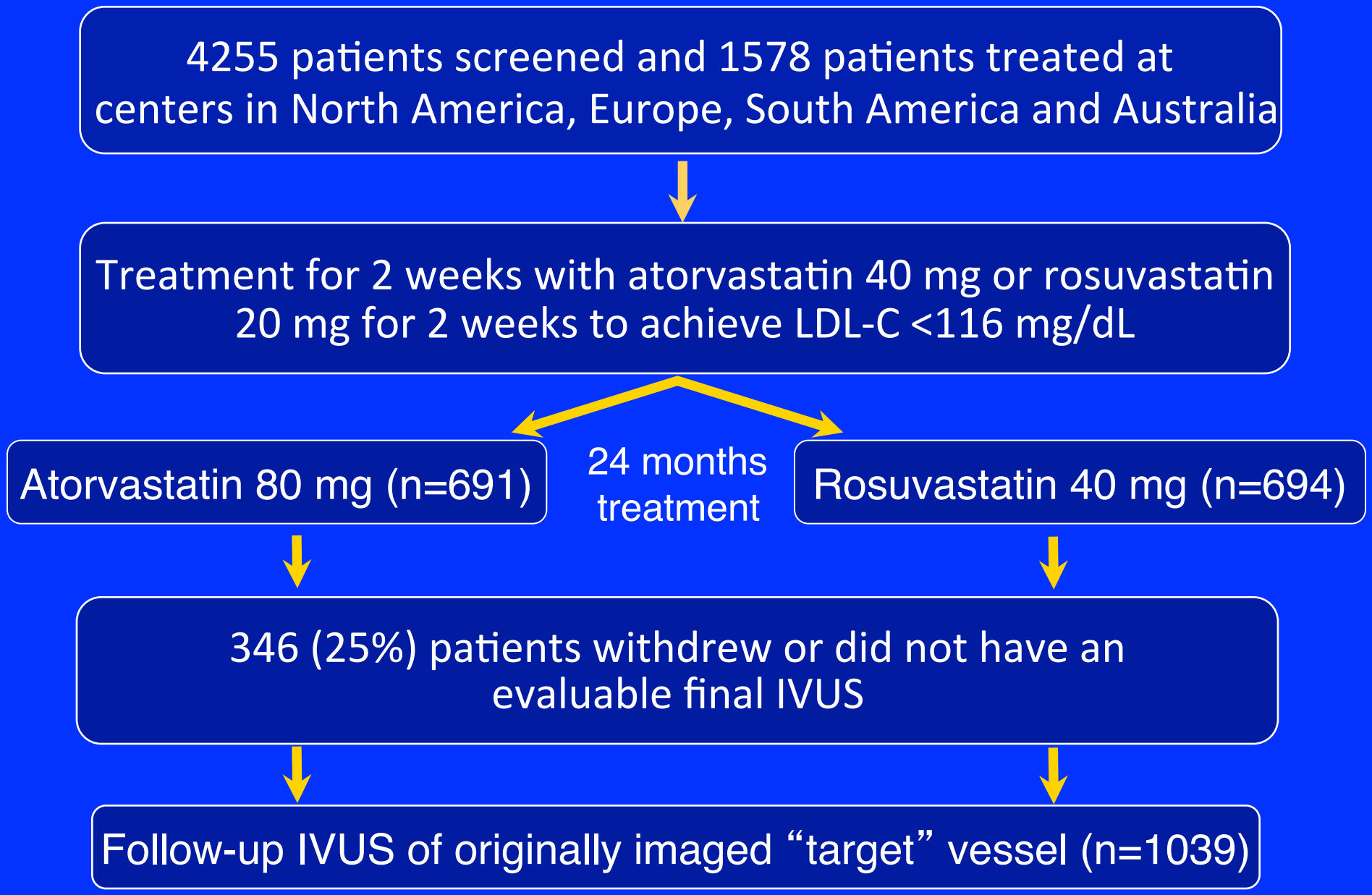
1385 patients with symptomatic CAD (angiographic stenosis >20%)

LDL-C with (>80 mg/dL) or without (>100 mg/dL) statin use last 4 weeks





SATURN Trial: Flow of Patients



Clinical Characteristics

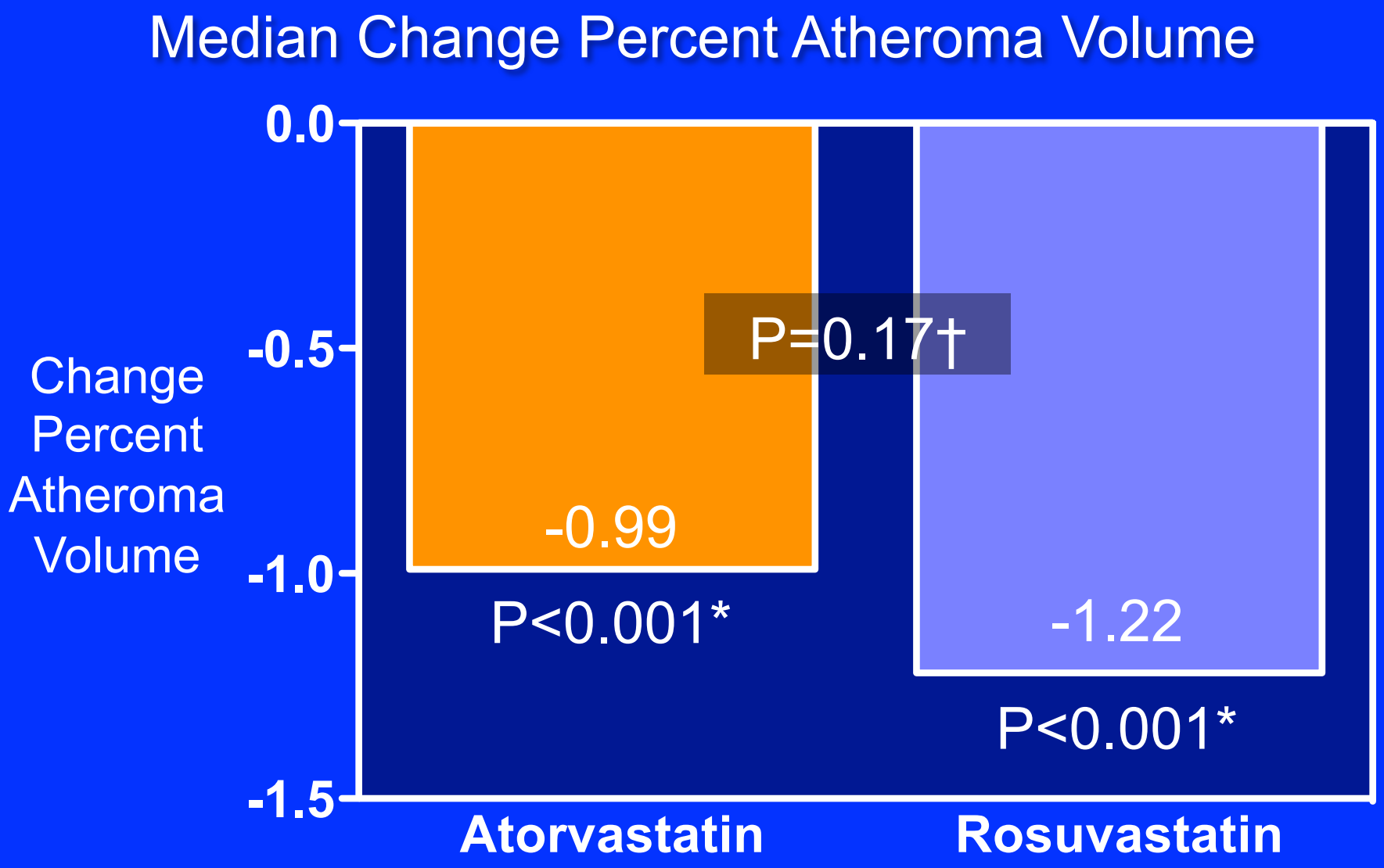
Parameter	Atorvastatin (n=519)	Rosuvastatin (n=520)
Mean age in years	57.9	57.4
Males	74.4%	72.9%
Median Body Mass Index	29.2	28.9
History of Hypertension	70.7%	70.0%
History of Diabetes	16.8%	13.8%
Prior Statin Use	61.5%	58.3%
Concomitant Medications		
Anti-platelet Therapy	97.9%	97.5%
Beta-blockers	61.1%	60.6%
ACE Inhibitors	44.5%	43.5%
Angiotensin Receptor Antagonists	15.8%	16.7%

Time-Weighted Lipid Levels and hsCRP

Parameter	Atorvastatin (n=519)	Rosuvastatin (n=520)	P Value
LDL cholesterol (mg/dL)	**70.2**	**62.6**	**<0.001**
HDL cholesterol (mg/dL)	**48.6**	**50.4**	**0.01**
Triglycerides (mg/dL)*	110	120	0.02
LDL:HDL cholesterol	1.5	1.3	<0.01
hsCRP (mg/L)*	1.0	1.1	0.05

Presented as least-square means. *Median values

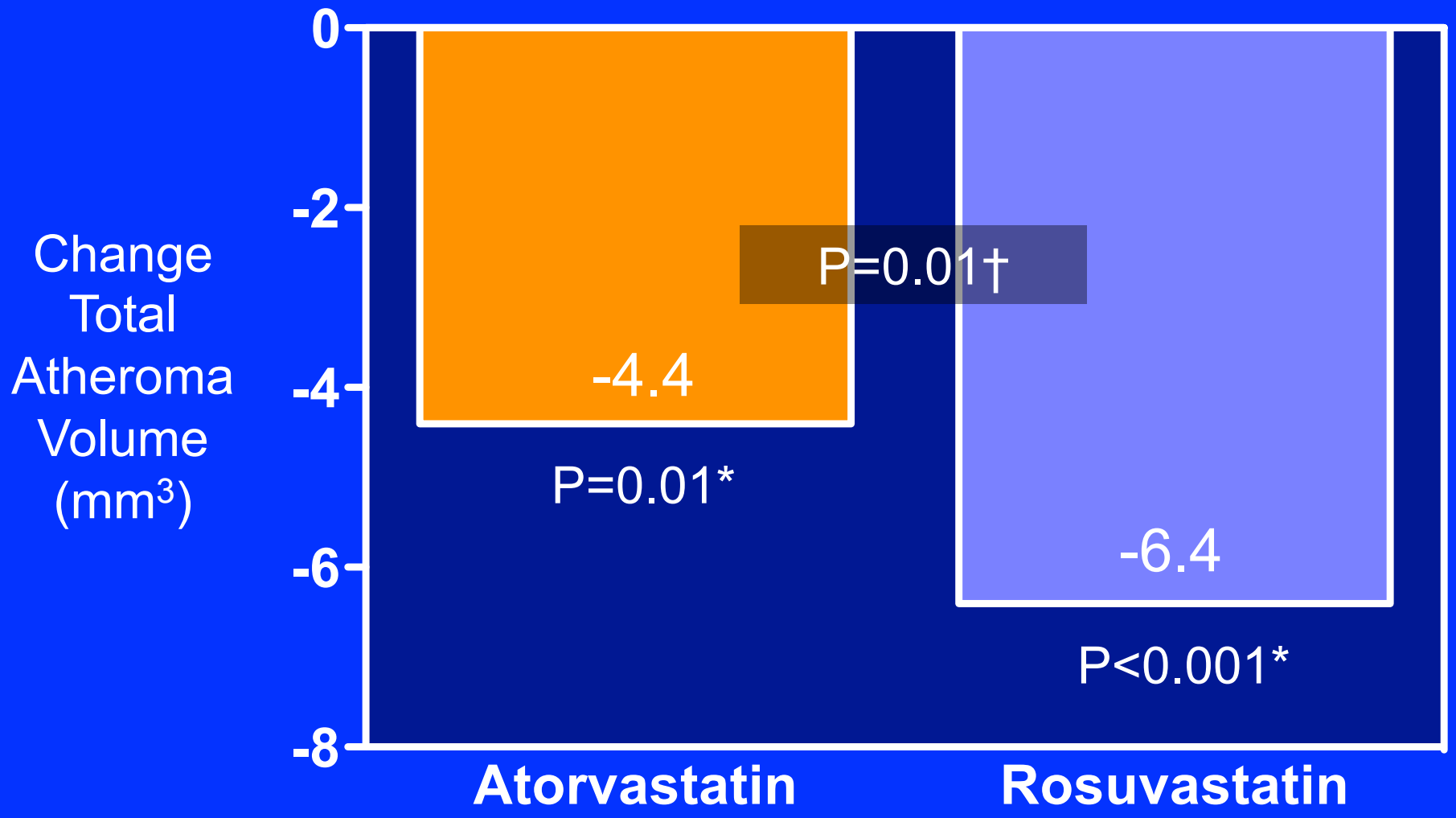
Primary IVUS Efficacy Parameter



† comparison between groups. * comparison from baseline

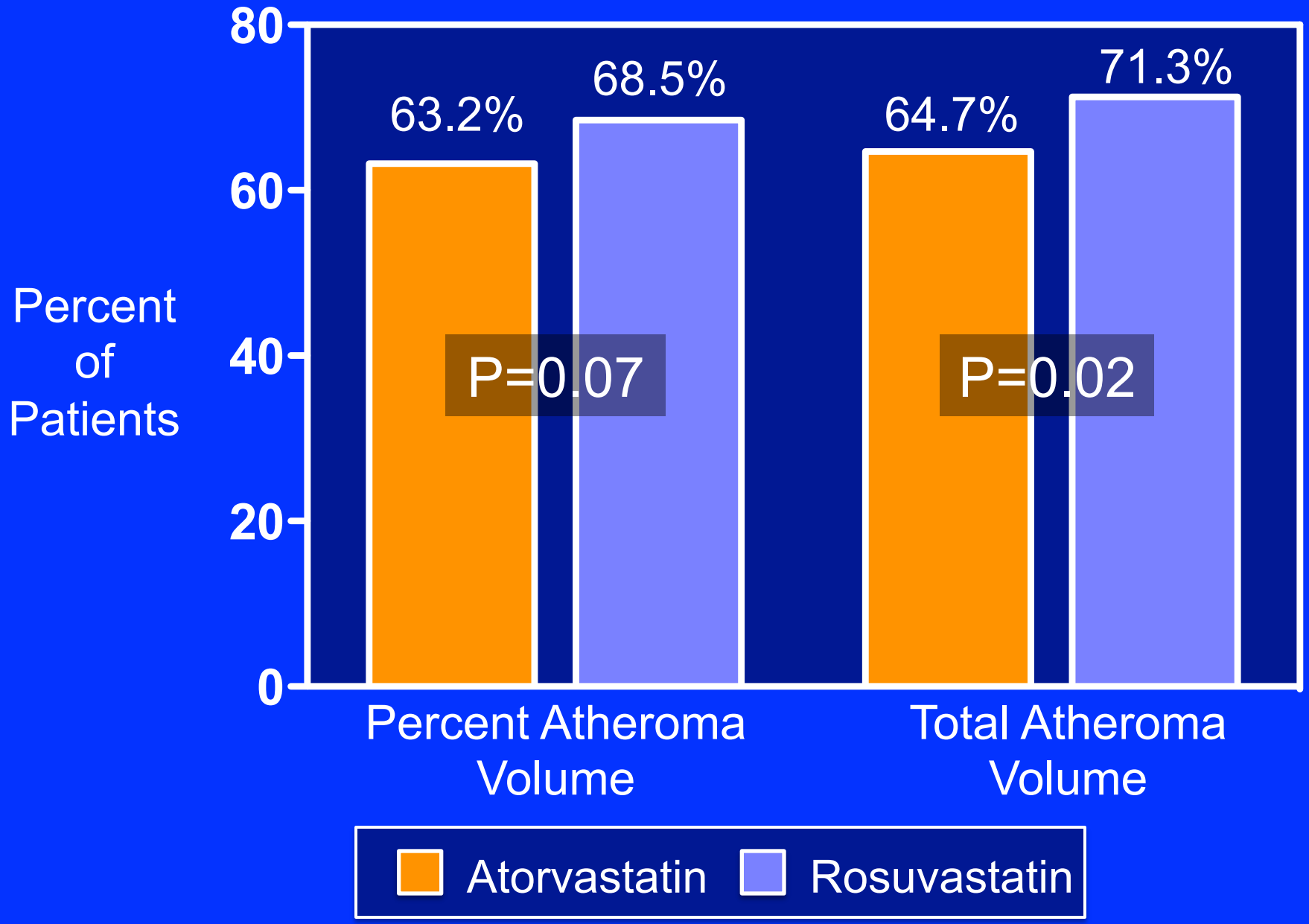
Secondary IVUS Efficacy Parameter

Median Change in Total Atheroma Volume

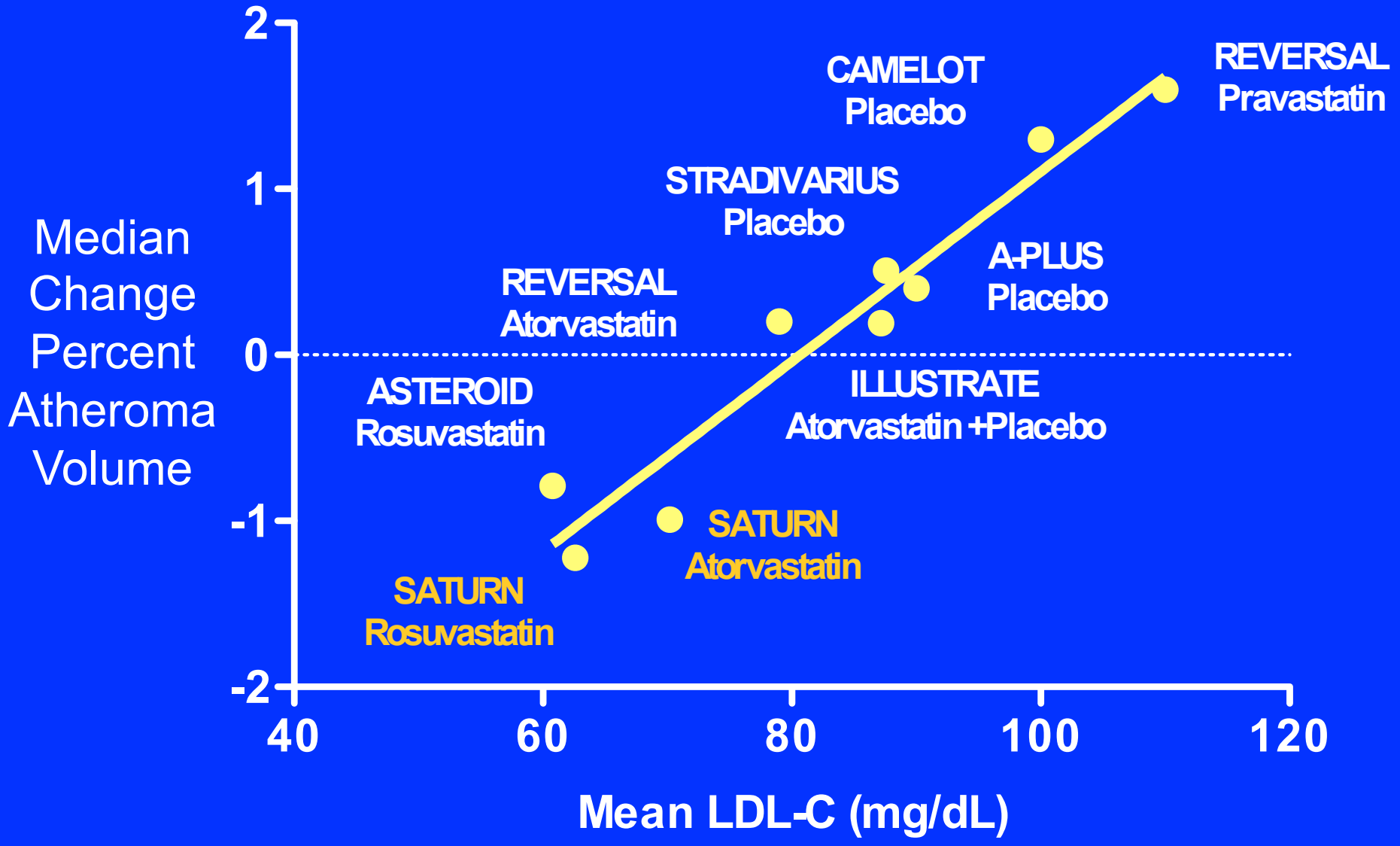


† comparison between groups. * comparison from baseline

Fraction of Patients Exhibiting Regression



LDL-C and Disease Progression



Conclusions

- Maximal statin therapy, achieving optimal LDL-C and HDL-C levels, is well tolerated and promotes extensive disease regression.

- The extent and frequency of regression observed in the SATURN trial is unprecedented.

- The finding that nearly one third of patients continue to progress supports the need to develop additional anti-atherosclerotic therapies.