Lipid Lowering Therapy in Patients with Peripheral Artery Disease

J. Pitha

Contents:

- *The role of dyslipidemia in PAD*
- *The type of dyslipidemia in PAD*
- *Treatment of dyslipidemia in PAD*
- *Evidence of the effectiveness of treatment of dyslipidemia in PAD*
- *Summary*

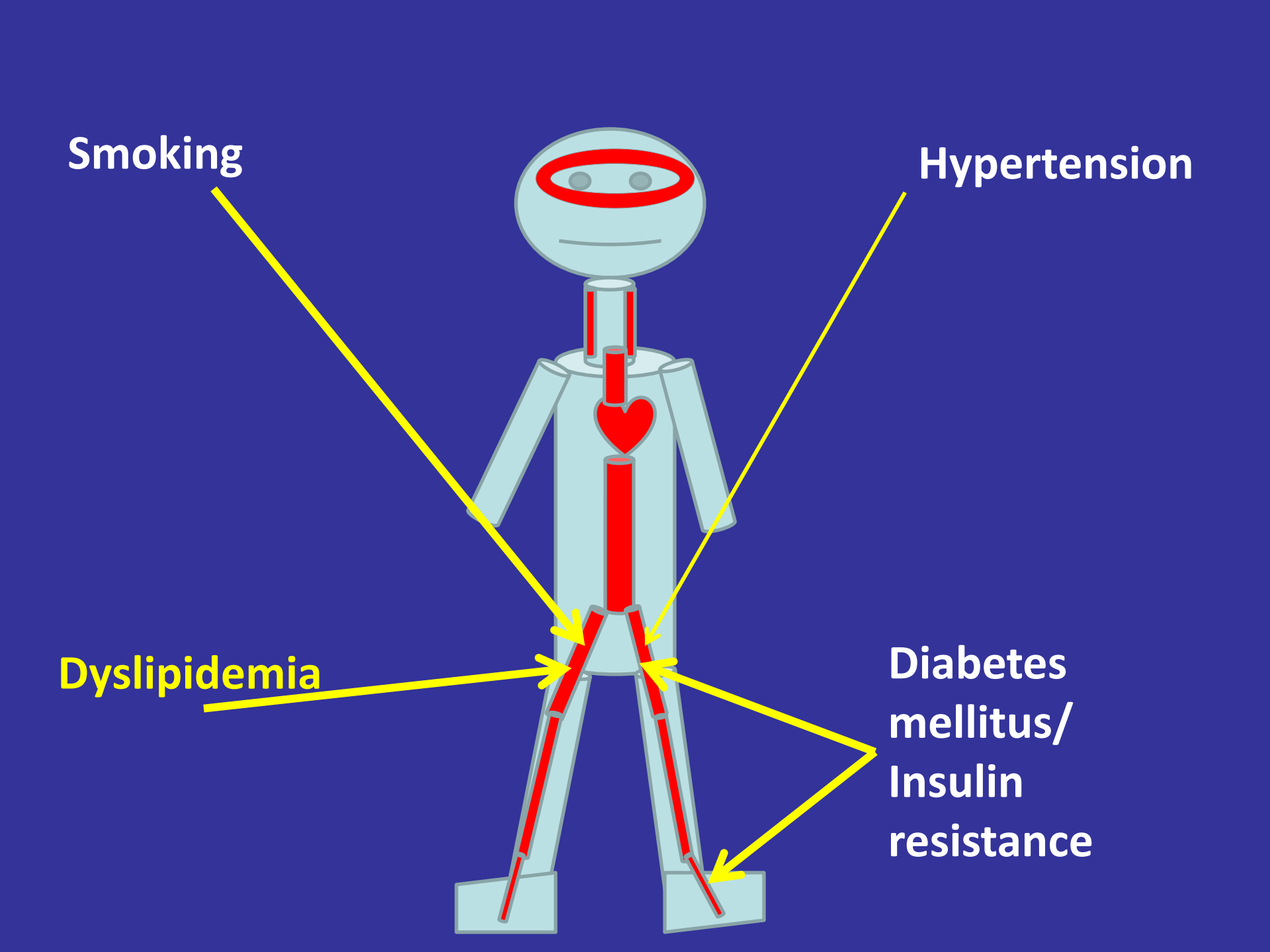
Main risk factors for CVD

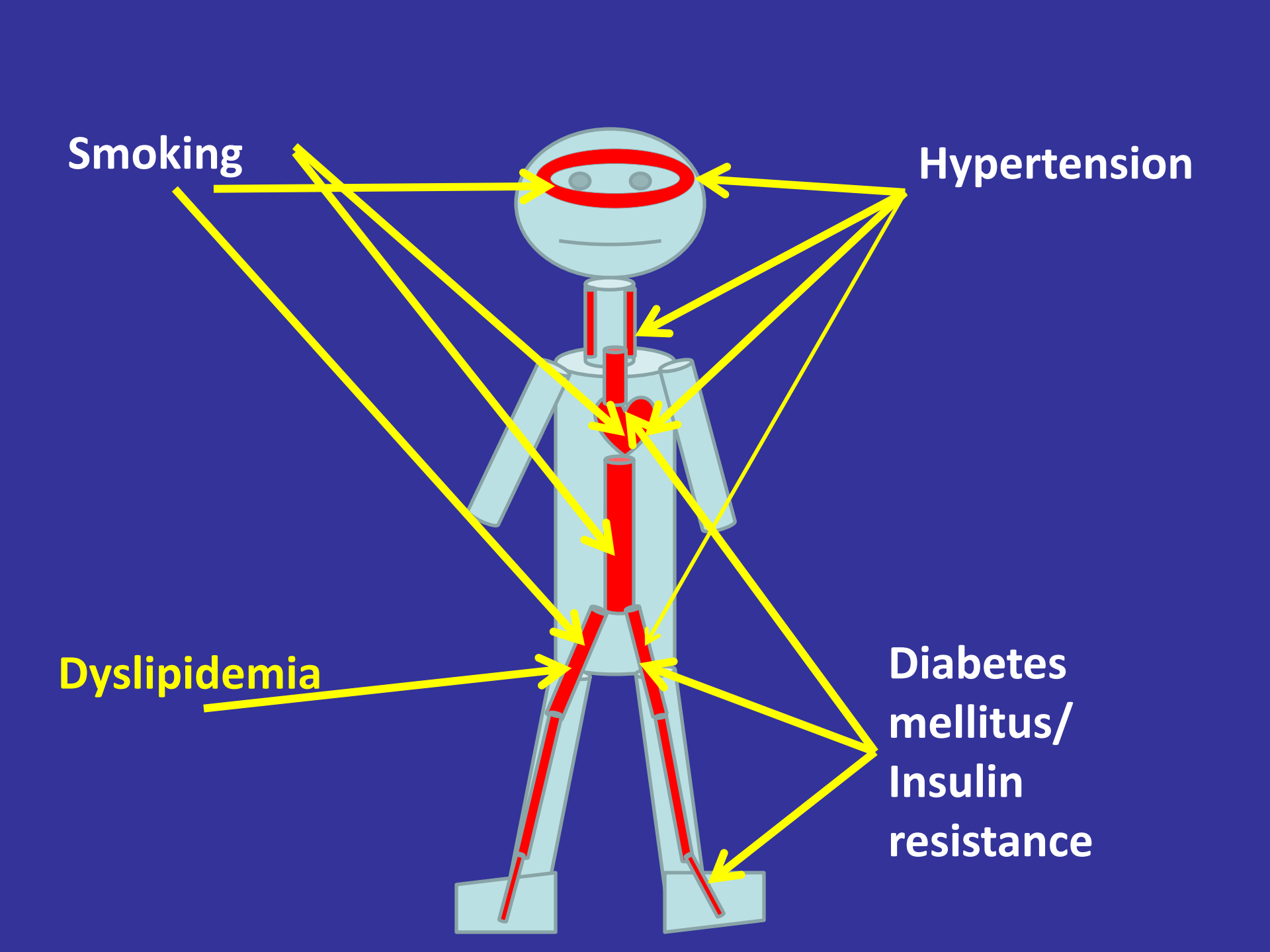
NON-MANAGEABLE

1) AGE
2) MALE GENDER
3) GENETICS

MANAGEABLE

1) SMOKING
2) DYSLIPIDEMIA
3) HYPERTENSION
4) DIABETES M.


Smoking
Hypertension
Dyslipidemia
Diabetes mellitus/ Insulin resistance


Smoking
Hypertension
Dyslipidemia
Diabetes mellitus/ Insulin resistance

MORTALITY OVER A PERIOD OF 10 YEARS IN PATIENTS WITH PERIPHERAL ARTERIAL DISEASE

MICHAEL H. CRIQUI, M.D., M.P.H., ROBERT D. LANGER, M.D., M.P.H., ARNOST FRONEK, M.D., PH.D., HEATHER S. FEIGELSON, M.P.H., MELVILLE R. KLAUBER, PH.D., THERESA J. MCCANN, M.P.H., AND DEIRDRE BROWNER, M.P.H.

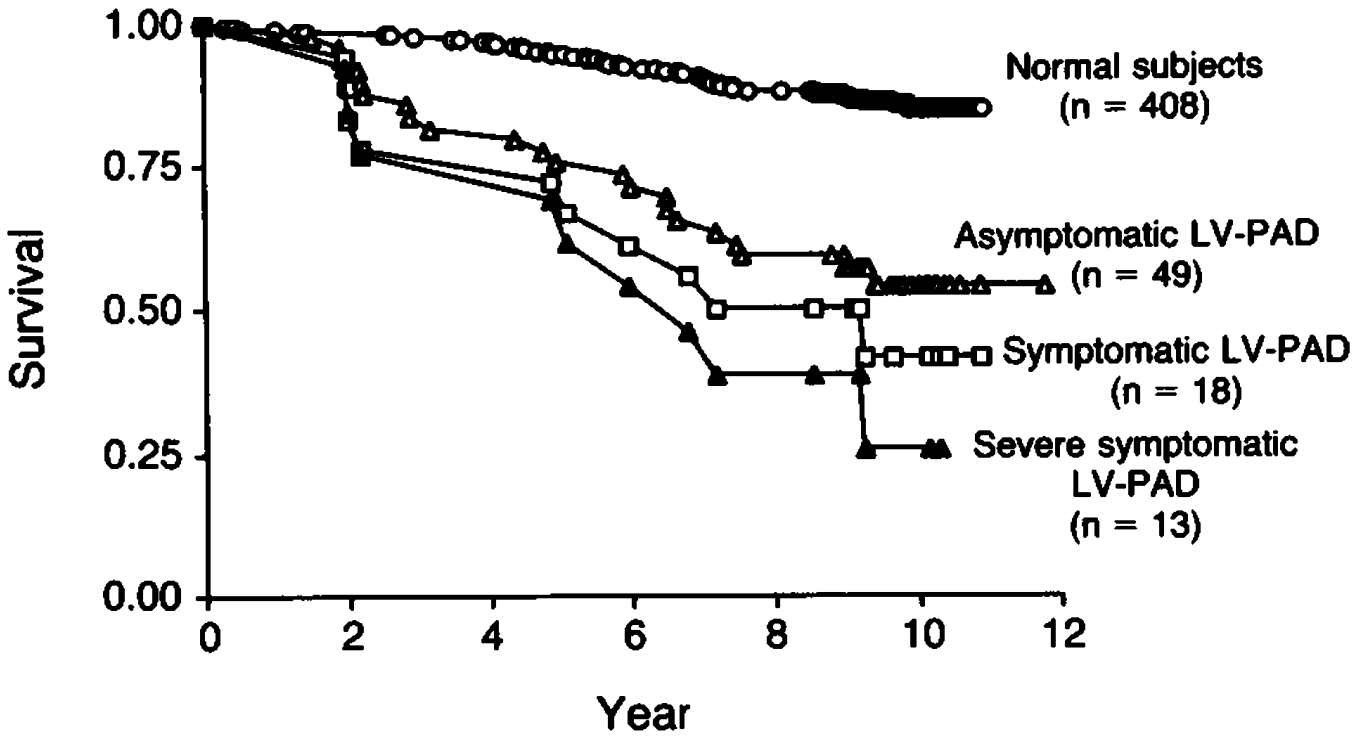
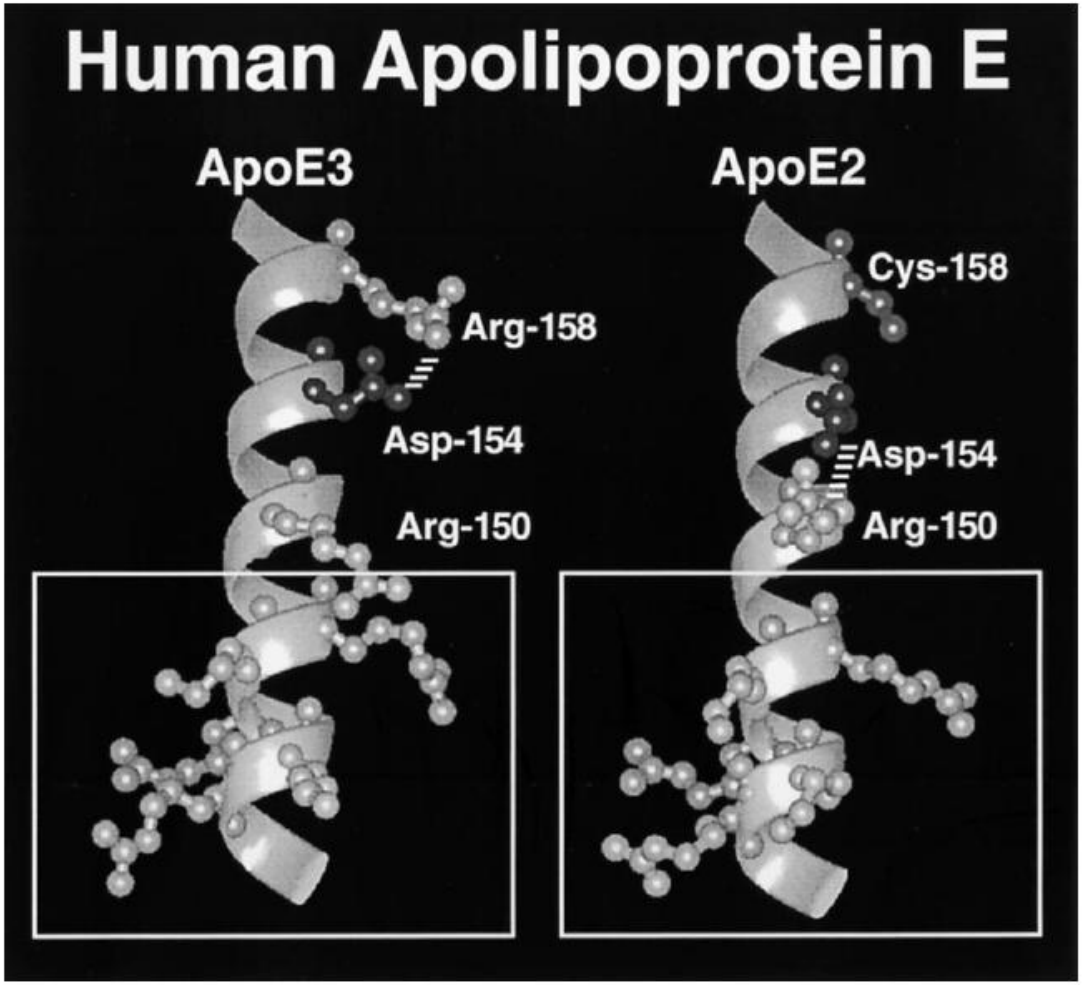


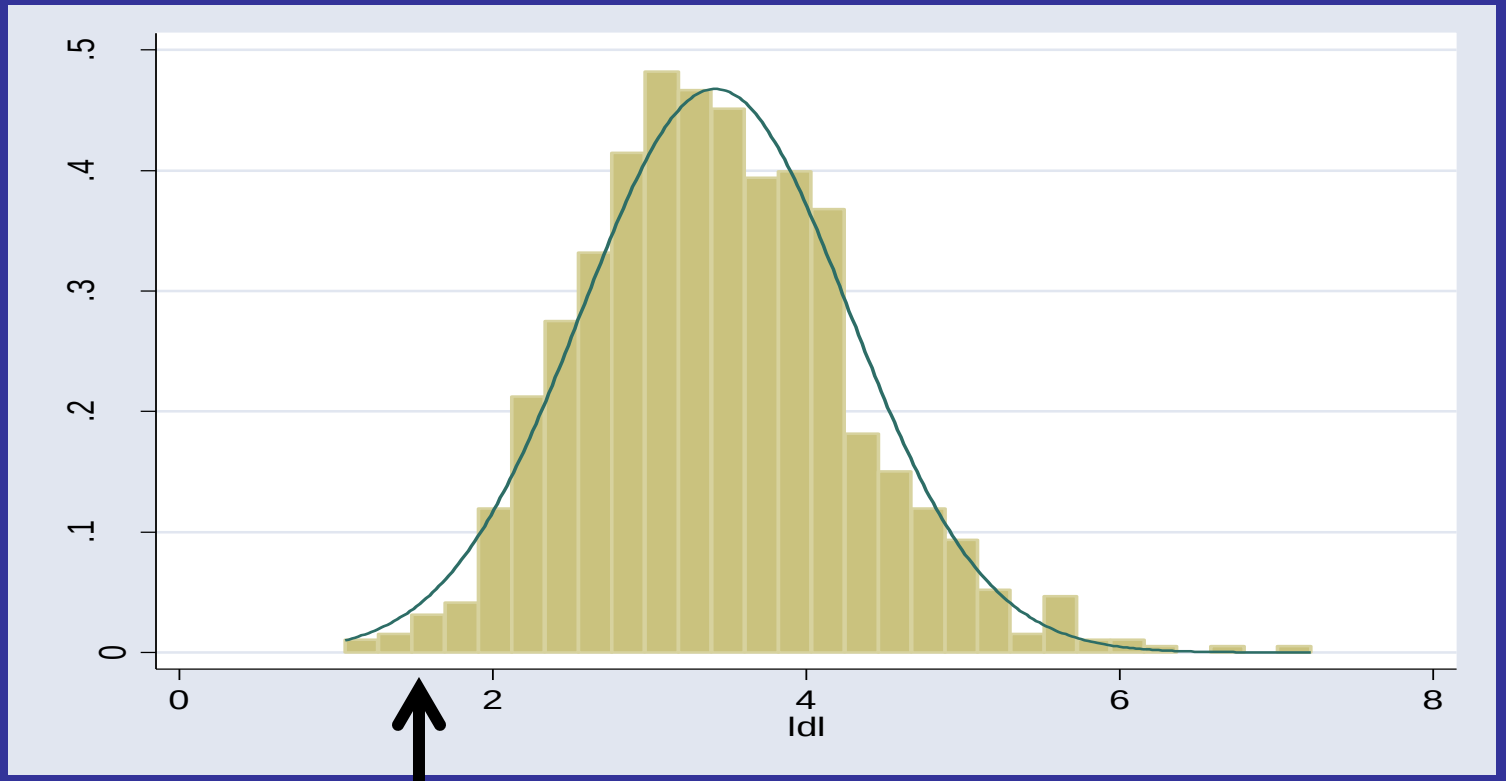
Figure 1. Kaplan–Meier Survival Curves Based on Mortality from All Causes among Normal Subjects and Subjects with Symptomatic or Asymptomatic Large-Vessel Peripheral Arterial Disease (LV-PAD).

(N Engl J Med 1992;326:381-6.)

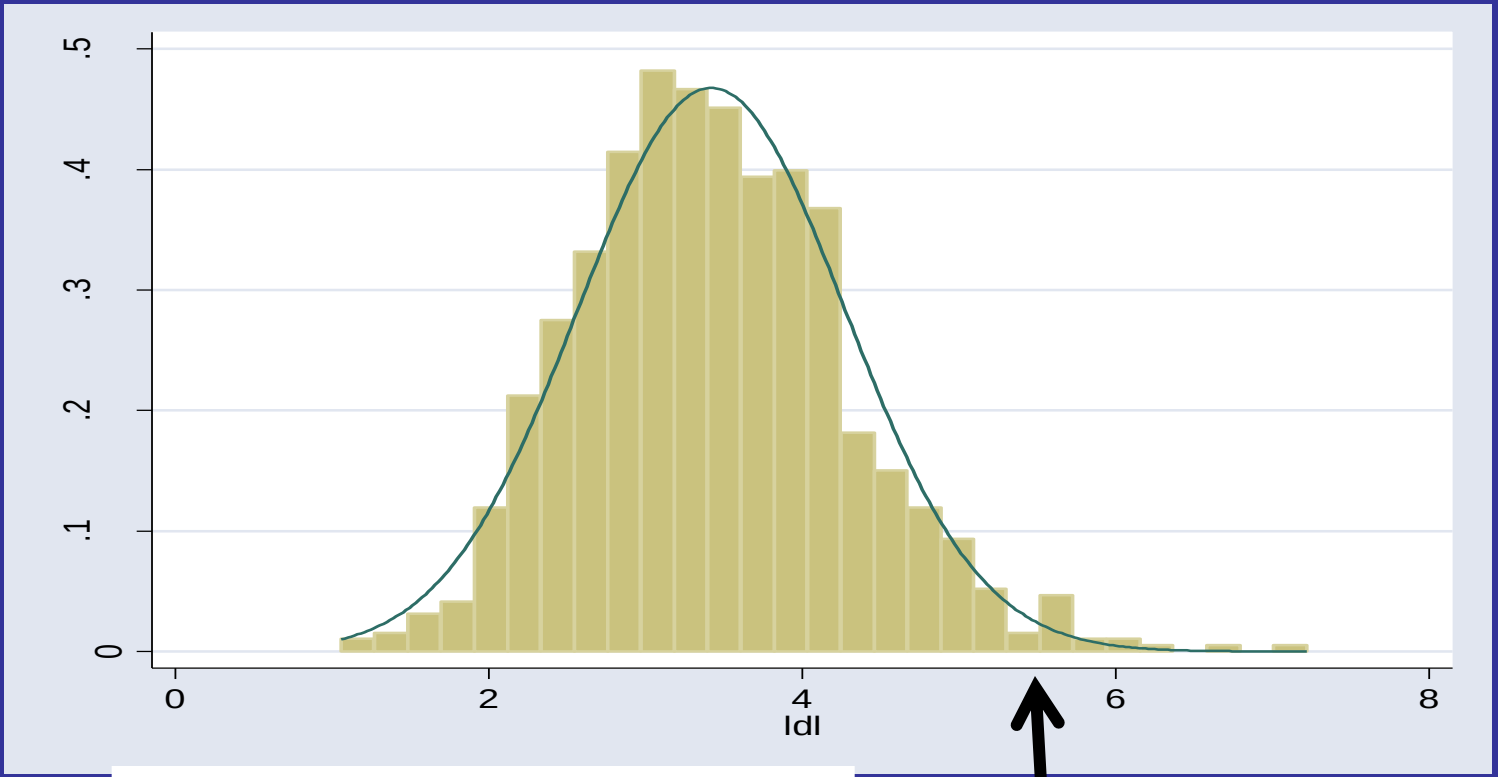
Remnant removal disease



ApoE2/2 effect



ApoE2/2 effect



Menopause, obesity, hypothyroidism, diabetes mellitus …

ApoE 2/2


Remnant removal disease

Remnant removal disease

- Cholesterol 8-26 mmol/L
- Triglycerides 5-15 mmol/L

- Frequency 1:50-60 000 (?)

- Often affects arteries of the lower limbs

BMI: 35 kg*m-2

Waist – 115 cm

SBP – 140 mm Hg

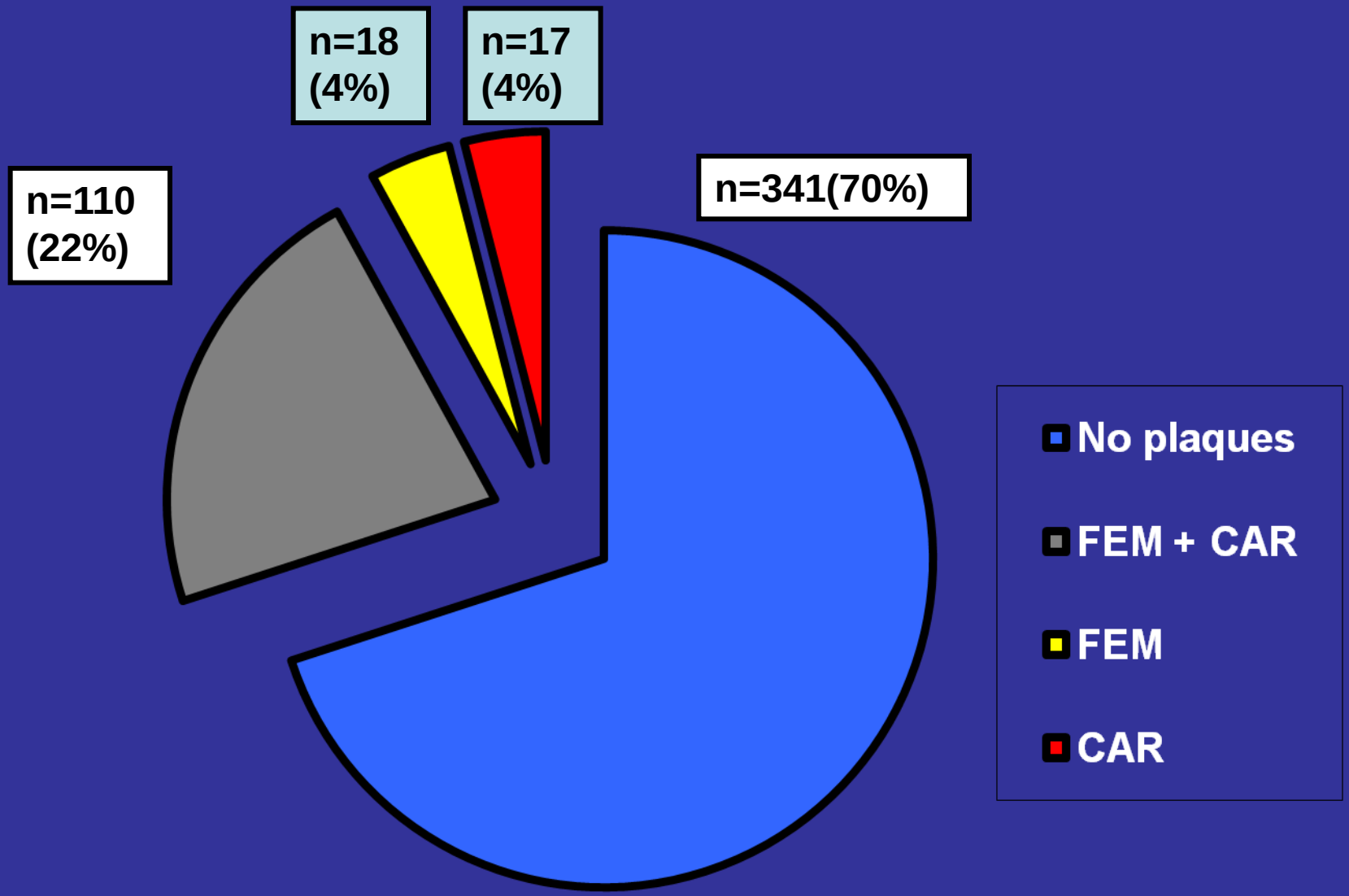
Chol – 6,2 mmol/L

TAG – 2,1 mmol/L

HDL - 1,08 mmol/L

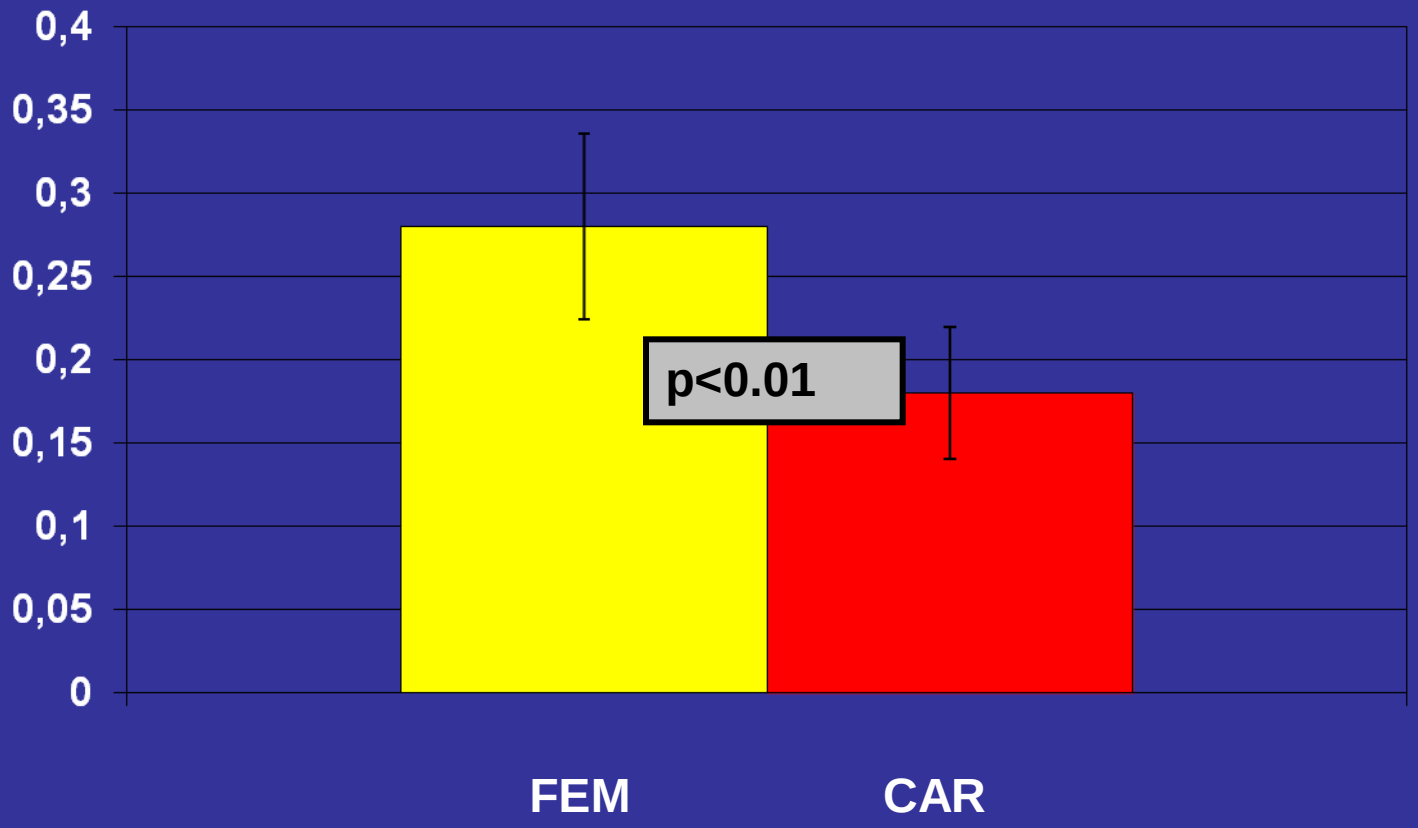
LDL – 3,8 mmol/L

Prevalence of atherosclerotic plaques in female population



Femoral x carotid arteries

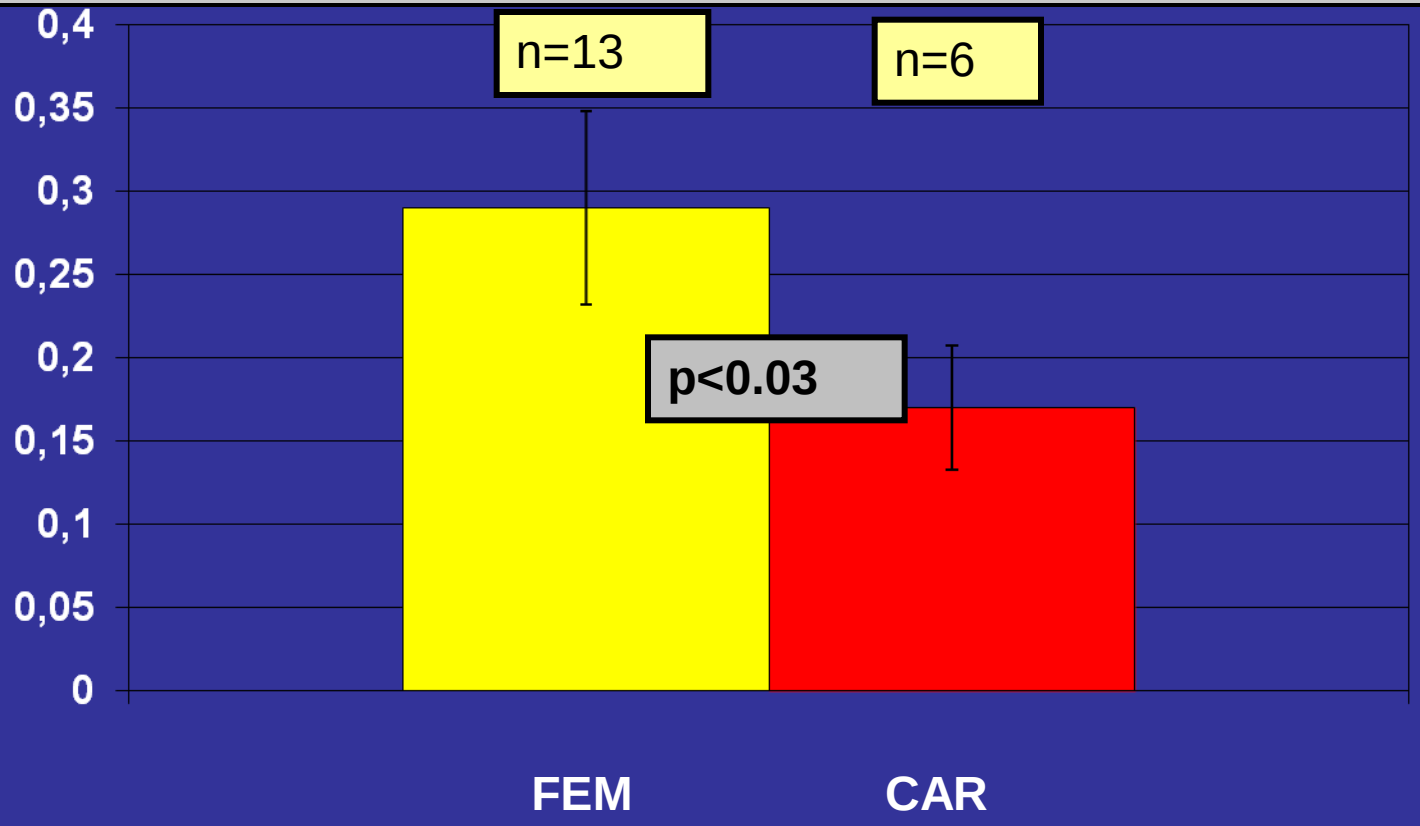
RLP-C (mmol/L)

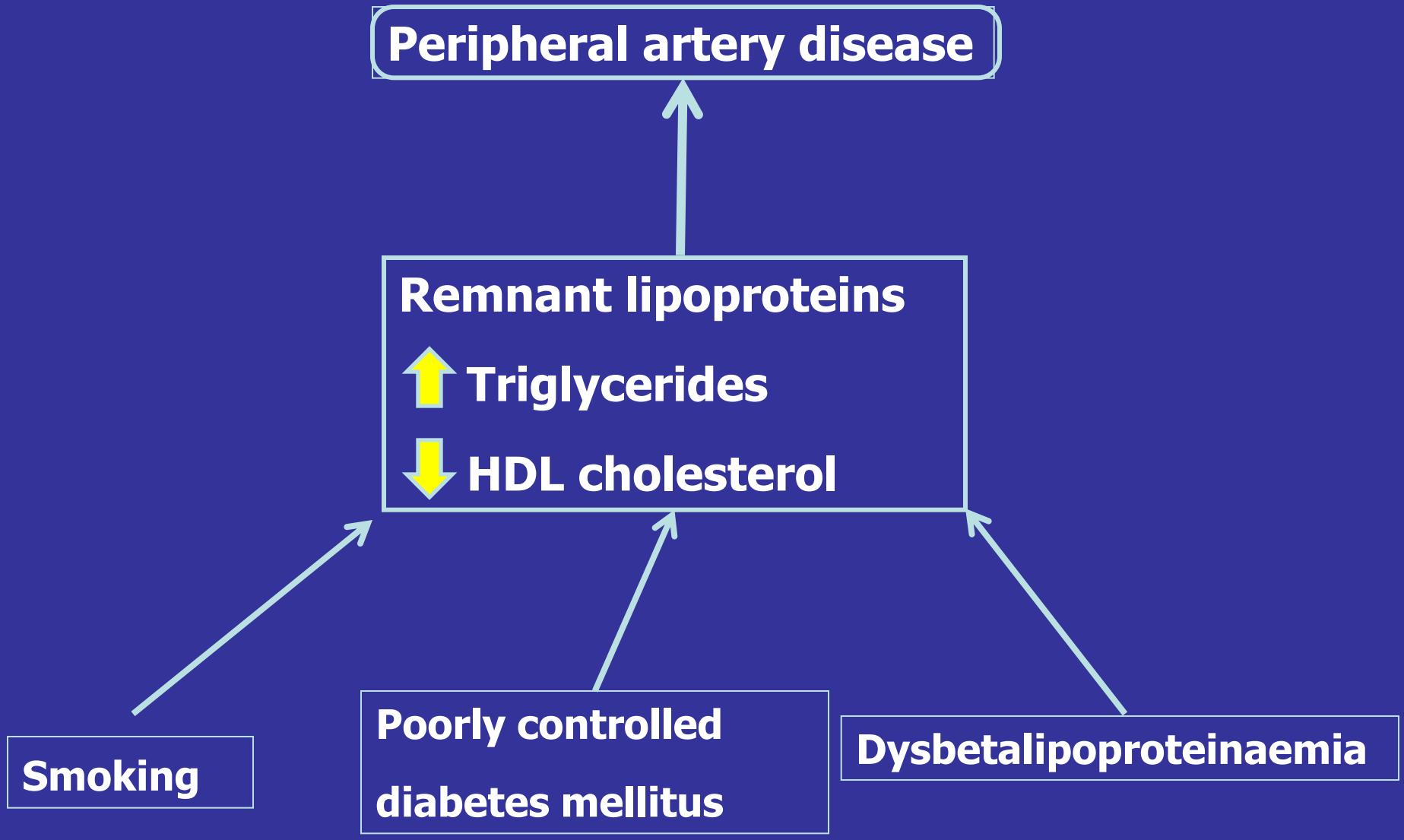


Femoral x carotid arteries

RLP-C (mmol/L)

SMOKERS




Peripheral artery disease
Remnant lipoproteins
Triglycerides
HDL cholesterol
Smoking
Poorly controlled
diabetes mellitus
Dysbetalipoproteinaemia

Management of dyslipidemia

- **Lifestyle modification**
- **Pharmacotherapy**
- **LDL/Lp(a) apheresis**
- **Transplantation (liver)**
- **Genetic therapy**

LIFESTYLE INTERVENTION

	PHYSICAL ACTIVITY, IDEAL WEIGHT , IDEAL WAIST	LESS of SATURATED FATS IN THE DIET	LESS of SIMPLE SUGARS AND MORE VEGETABLES IN THE DIET
TOTAL (LDL) CHOLESTEROL	+	+++	+
TRIGLYCERIDES	+++	+	+++
HDL CHOLESTEROL	+++	+	++

EFFECT OF HYPOLIPEMIC DRUGS

	LDL	HDL	TG	Compliance
BILE ACID SEQUESTRANTS	**decrease 15–30%**	increase 3–5%	neutral	bad
NICOTINIC ACID	**decrease 25%**	increase 15–30%	decrease 20–50%	acceptable
FIBRATES	**decrease 5–15%**	increase 20%	decrease 20–50%	fine
STATINS	**decrease 25–50%**	increase 4–12%	decrease 14-29%	fine
EZETIMIBE	**decrease 18%**	increase 1%	decrease 8%	fine

Yeshurun D, Gotto AM. *Southern Med J* 1995;88(4):379–391. Knopp RH. *N Engl J Med* 1999;341:498–511. Product Prescribing Information. Gupta EK, Ito MK. *Heart Dis* 2002;4:399-409.

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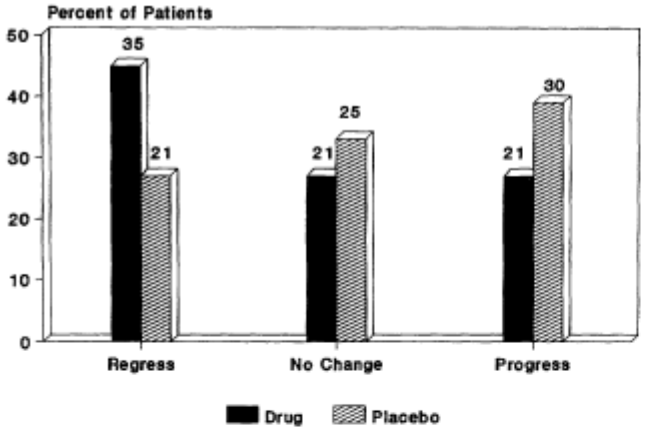
Effects of Colestipol-Niacin Therapy on Human Femoral Atherosclerosis

David H. Blankenhorn, MD; Stanley P. Azen, PhD; Donald W. Crawford, MD; Sharon A. Nessim, DrPH; Miguel E. Sanmarco, MD; Robert H. Selzer, MS; Anne M. Shircore, BS; and Emily C. Wickham, MS



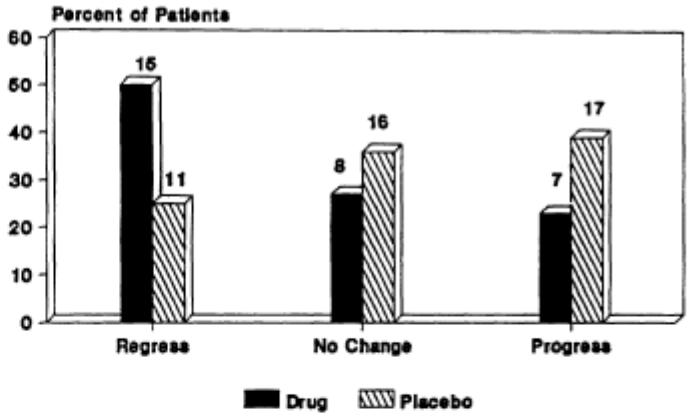
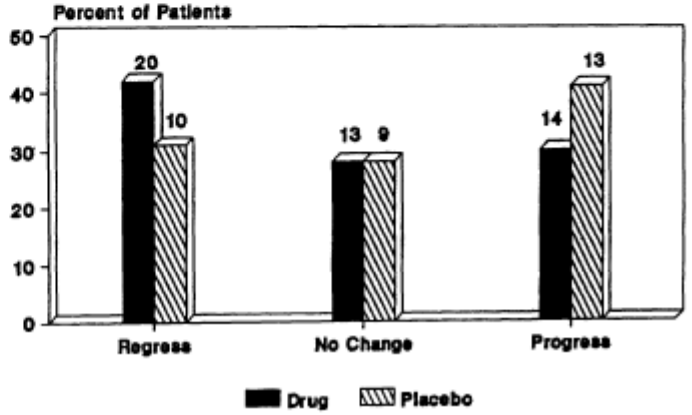


FIGURE 2. *Bar graphs of percent distribution of progressors, nonchangers, and regressors by treatment. Solid bars represent drug and diet group (experimental), and striped bars represent placebo and diet group (control). Numbers above bars indicate number of patients. See text for definitions of regressors, progressors, and nonchangers.* Top right panel *is similar to* left panel *for patients with baseline total cholesterol of 240 mg/dl or less.* Bottom right panel *is similar to left panel for patients with baseline total cholesterol of more than 240 mg/dl.*



STATINS IN PERIPHERAL ARTERY DISEASE

REDUCTION OF CARDIOVASCULAR EVENTS:

MRC/BHF Heart Protection Study of cholesterol lowering with simvastatin in 20,536 high-risk individuals: a randomised placebo controlled trial.
Lancet 2002, 360(9326):7-22.
6,748 participants PAD; 5-year-follow-up, significant 19% relative and a 6.3% absolute reduction in major cardiovascular events

IMPROVEMENT IN CLAUDICATIONS (50-163 m)

Pedersen TR, Kjekshus J, Pyorala K, et al.
Effect of simvastatin on ischemic signs and symptoms in the Scandinavian simvastatin survival study (4S).
Am J Cardiol 1998, 81(3):333-335.

EFFECT OF HYPOLIPEMIC DRUGS

	LDL	HDL	TG	Compliance
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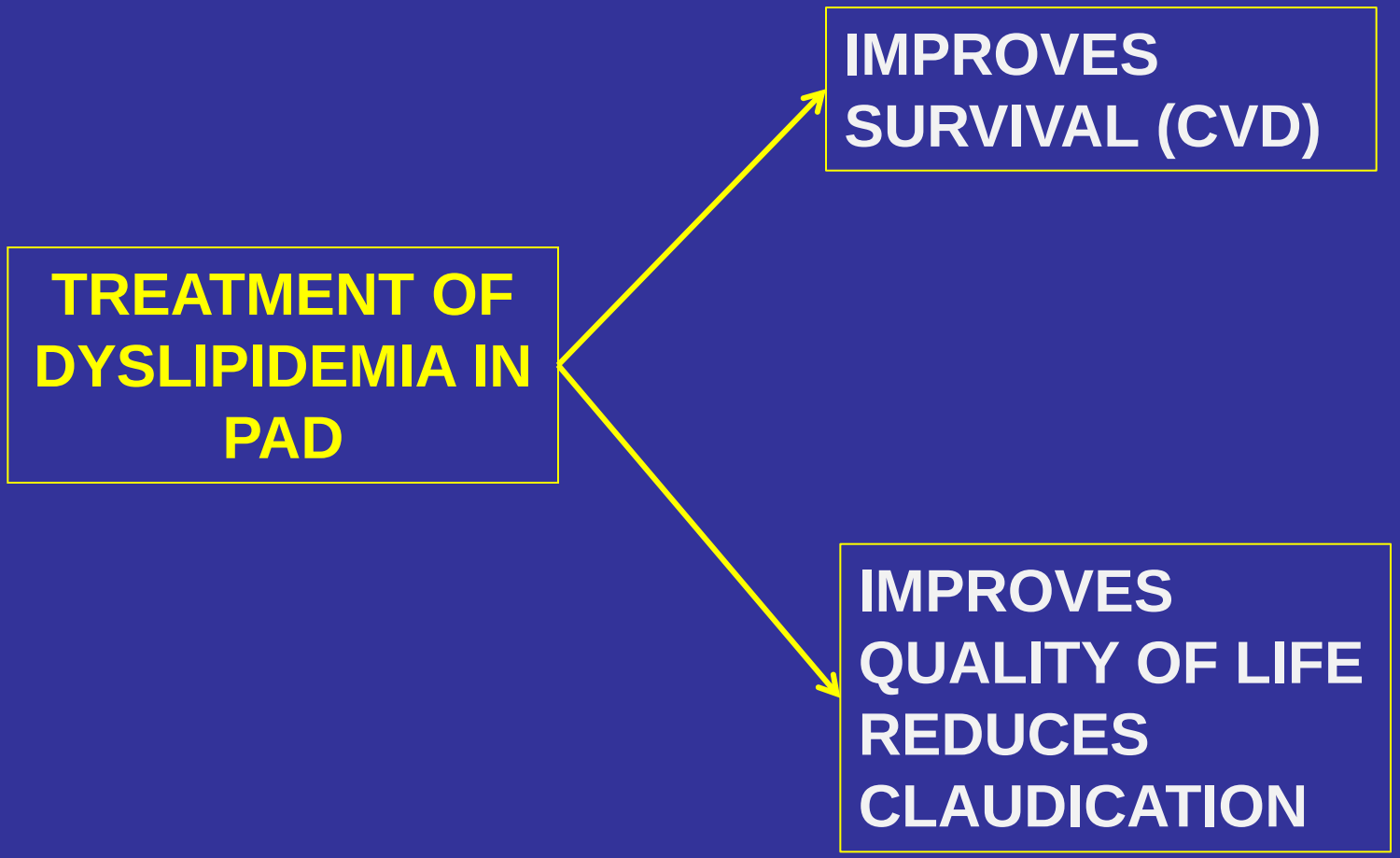
TREATMENT OF DYSLIPIDEMIA IN PAD
IMPROVES SURVIVAL (CVD)
IMPROVES QUALITY OF LIFE
REDUCES CLAUDICATION

Treatment goals in patients with PAD:

- LDL cholesterol less than 1.5-1.8 mmol/L
- HDL more than 1.1 mmol/L (men)1.3 mmol/L(women)
- Triglycerides less than 2.0 mmol/L

- Non-smoking status
- Physical activity more than 15 minutes daily
- BMI less than 25 kg/m^2, waist circumference less than 94 cm (men), 80 cm (women)
- Blood pressure 130-140/80-85 mm Hg

Thank you for your attention