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PREAMBLE:

Coronary heart disease (CHD) or ischemic heart disease (IHD) is the leading cause of death in older adults and accounts for more than half of all deaths in patients older than 65.

The recognition that elevated LDL cholesterol is an independent risk factor for the development of CHD and the association between a lowering of LDL cholesterol and improved clinical outcomes has been well established in the evidence based literature.

A number of randomized, double-blind, placebo-controlled studies have demonstrated that statins reduce major coronary events and mortality in elderly high-risk patients with hyperlipidemia. Reductions in major coronary events and mortality in elderly high-risk patients was shown in the Heart Protection Study (HPS). The study demonstrated that these effects were seen regardless of the age or gender or of the pre-therapy lipid levels. The HPS investigators recommended treating persons at high risk for cardiovascular events with statins, regardless of the initial levels of serum lipids, age or gender.

The Scandinavian Simvastatin Survival Study (4S) showed that the absolute risk reductions for both all-cause mortality and CHD mortality were approximately twice as great in elderly patients (over 65 years of age) compared with younger patients (less than 65 years of age). In the Long-Term Intervention with Pravastatin in Ischemic Disease (LIPID) study it was demonstrated that benefits of treatment with Pravastatin were greater in groups at higher absolute risk for a major coronary event such as the elderly, patients with diabetes mellitus or who had a history of smoking and patients with low serum HDL-C levels.

PROTOCOL FOR USE:

All Orders

- i. Assess Benefit and risk. Do the potential benefits of therapy outweigh the potential risks with the chosen agent?
- ii. Consider drug interactions and side effects profile and conduct regular monitoring of liver function. (ALT,gamma GT,CK as per cps monograph)
- iii. When statin therapy is appropriate, recommend treating to targets in guidelines
- iv. Identify and treat secondary causes eg. hypothyroidism, renal disease and diabetes.
- v. Stratify for risk using Framingham tables (page 2)

NOTE: Any other statin other than those listed require Special Authorization (SA).

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Recommendations for the management and treatment of dyslipidemia

Table 2: Model for calculating the 10-year risk of CAD in a patient without diabetes mellitus or clinically evident cardiovascular disease, * using Framingham data ^{18,30}					
STEP 1: DETERMINE RISK POINTS ^{18†}			STEP 2: CALCULATE RISK ^{30‡}		
Risk factor	Risk Points		Total Risk Points	10-year risk, %	
	Men	Women		Men	Women
Age, yr					
30-34	-1	-9	1	3	2
35-39	1	-4	2	4	3
40-44	1	0	3	5	3
45-49	2	3	4	7	4
50-54	3	6	5	8	4
55-59	4	7	6	10	5
60-64	5	8	7	13	6
65-69	6	8	8	16	7
70-74	7	8	9	20	8
			10	25	10
			11	31	11
			12	37	13
			13	45	15
			14	≥53	18
			15		20
			16		24
			17		>27
Total cholesterol level, mmol/L					
<4.14	-3	-2			
4.15-5.17	0	0			
5.18-6.21	1	1			
6.22-7.24	2	2			
≥7.25	3	3			
HCD-C level, mmol/L					
< 0.90	2	5			
0.91 – 1.16	1	2			
1.17 – 1.29	0	1			
1.30-1.55	0	0			
≥ 1.56	-2	-3			
Systolic blood pressure, mm Hg					
< 120	0	-3			
120-129	0	0			
130-139	1	1			
140-159	2	2			
≥160	3	3			
160					
Smoker					
No	0	0			
Yes	2	2			
Record the points					
Age	—	—			
Total cholesterol	—	—			
HDL-C	—	—			
Blood pressure	—	—			
Smoker	—	—			
Add total risk points	—	—			

STEP 3: COMPARE RISK WITH THAT OF AVERAGE PERSON OF SAME AGE ³⁰					
Age, yr	Average risk, %	Low Risk, § %			
Men					
30-34	3	2			
35-39	5	3			
40-44	7	4			
45-49	11	4			
50-54	14	6			
55-59	16	7			
60-64	21	9			
65-69	25	11			
70-74	30	14			
Women					
30-34	<1	<1			
35-39	<1	<1			
40-44	2	2			
45-49	5	3			
50-54	8	5			
55-59	12	7			
60-64	12	8			
65-69	13	8			
70-74	14	8			

Note: the Framingham tables underestimates CAD risk if the level LDL-C level is >6.0 mmol/L.
 * For example, a 55-year-old man who has a total cholesterol level of 5.43 mmol/L, an HDL-C level of 1.23 mmol/L and a systolic blood pressure of 148 mm Hg and who smokes would have a total risk score of 9. His 10-year risk for CAD would therefore be 20%; the average risk for an average person of his age in the Framingham study population is 16%
 †This section of the table was reprinted, with permission, from Grundy et al.¹⁸
 ‡Risk of CAD outcomes including angina pectoris, unstable angina, nonfatal myocardial infarction and coronary death over subsequent 10 years for a Framingham Study participant with that specific risk score.
 §Risk of a patient with "optimal" risk factors.

Table 3: Target lipid values by level of risk			
LEVEL OF RISK (DEFINITION)	Target values		
	LDL-C level, mmol/L	Total cholesterol: HCD-C ratio	Triglyceride level, mmol/L
Very high* (10-year risk of CAD >30%, or history of cardiovascular disease or diabetes)	< 2.5	< 4	< 2.0
High* (10-year risk 20%-30%)	< 3.0	< 5	< 2.0
Moderate † (10- year risk 10%-20%)	< 4.0	< 6	< 2.0
Low ‡ (10- year risk <10%)	< 5.0	< 7	< 3.0

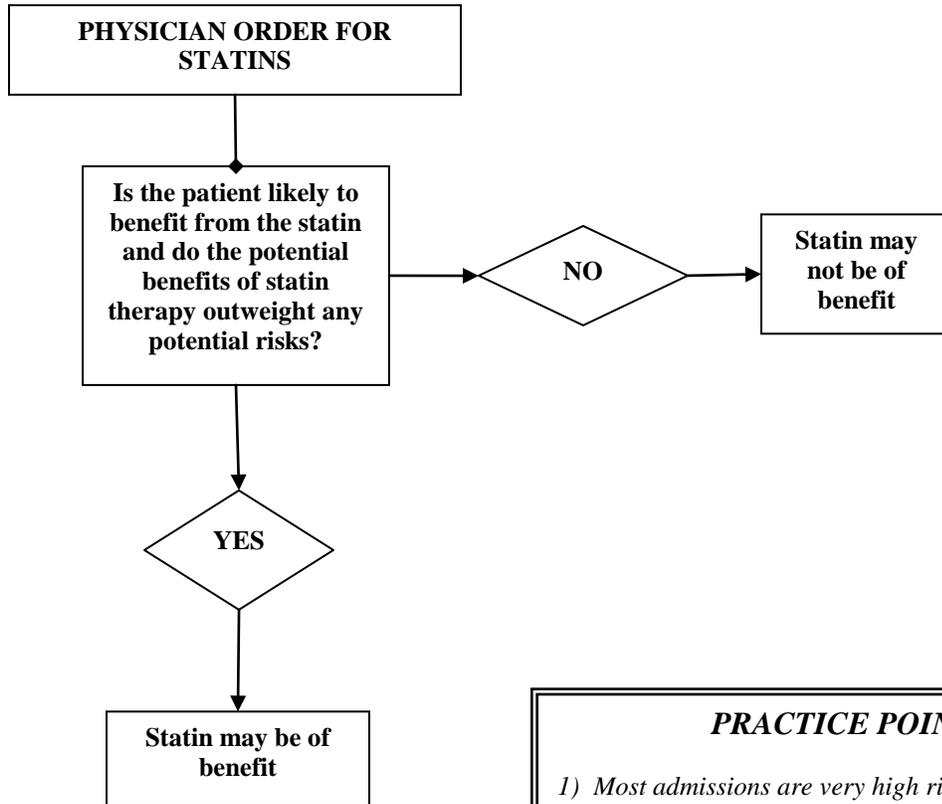
* Start medication and lifestyle changes concomitantly if values are above target values.
 † Start medication if target values are not achieved after 3 months of lifestyle modification.
 ‡ Start medication if target values are not achieved after 6 months of lifestyle modification.

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PRACTICE POINTS

- 1) Most admissions are very high risk of future cardiac events.
- 2) Consider side-effect profile and drug-drug interaction when choosing a statin.
- 3) Need treatment plan that accounts for individualized patient outcomes especially efficacy.
- 4) When therapy is appropriate, treat to guidelines.

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