

## A MAN WITH DYSLIPIDEMIA: TO TREAT OR NOT TO TREAT?

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Mr R is a 43 year-old Indian man. He has hypertension for the past one year, and was started on an angiotensin II receptor blocker recently (his latest BP is 130/80 mm Hg). He is a non-smoker and is not known to have diabetes. His BMI is 25.4 kg/m<sup>2</sup>. His latest fasting glucose is 5.1 mmol/L. Mr R. does not consume alcohol and does not exercise regularly. His father died of a heart attack at the age of 55. His grandfather had hypertension and diabetes. His fasting lipid results are as follow:

		<i>Normal range</i>	<i>Desirable level</i>
Total cholesterol	3.7 mmol/L	3.0-6.4	<5.2
HDL-cholesterol	0.41 mmol/L	0.90-1.55	>1.0
LDL-cholesterol	1.90 mmol/L	2.3-4.4	<3.4
Triglyceride	3.03 mmol/L	0.70-1.55	<2.3
TC/HDL-C (risk)	9.0	3.0-5.9	

**Question:** Does he need antilipidemic agent? If so, what is the drug of choice?

### The principle

The main point to remember in the management of dyslipidemia is that lipid abnormalities by itself is not a clinical disease. It produces no symptoms and has no immediate morbidity and mortality. However, dyslipidemia is a *risk factor* that over time increases the *likelihood* of clinical atheromatous disease. In considering whether to pharmacologically treat the patient with dyslipidemia, the *actual likelihood* of cardiovascular disease development must be quantified, taking into account *dyslipidemia* and *other risk factors* for clinical disease.<sup>1</sup>

### The guidelines

The NCEP guidelines [Link] on management of dyslipidemias, updated in 2004, give clear instructions on what to do in the face of the presenting patient.<sup>2</sup> As shown in Table 2 of the guidelines, our patient, Mr R, has 3 major risk factors for coronary disease, namely hypertension, low HDL cholesterol and a family history of coronary disease. Next, the 10-year absolute risk of developing coronary disease must be calculated, and the Framingham point scores are a simple way to do this, with the charts being reproduced in the appendix of the NCEP guidelines of 2001. Points are given for age, total cholesterol levels, smoking status, HDL levels and systolic blood pressure.

The importance of HDL can be seen that it is used twice in the NCEP guidelines, once as a major risk factor, and again in the calculation of absolute 10-year risk of disease development. Note also that triglycerides are not involved in these calculations. Mr R has a Framingham score of 4 and so his absolute 10-year coronary risk is only 1%. Patients with 2 or more major coronary risks, and an absolute 10-year risk of <10% should have an LDL cholesterol of less than 3.3 mmol/l. Since his LDL is only 1.9 mmol/l, no antilipidemic treatment is required for Mr R.

### Additional discussion

It used to be argued that patients with low HDL and high triglycerides may benefit more from the fibrates. However, a recent review of different anti-hyperlipidemic agents involving 97 trials recruiting over 250,000 patients showed that only the statins and n-3 fatty acids have been shown to reduce the incidence of overall and cardiovascular mortality.<sup>3</sup> This is further supported by a report in the Lancet of a 5-year trial on 9795 diabetic patients.<sup>4</sup> The primary outcome of coronary events was similar in the placebo and fibrate groups, with both total and cardiovascular mortality being non-significantly higher in the fenofibrate treated patients. The objective of treatment should not be to improve the lipid profile per se but to reduce cardiovascular morbidity and mortality, and the large numbers studied in the trials means that we can confidently say that the statins do reduce cardiovascular events and mortality when used in the appropriately high risk patients.

Patients similar to Mr R have in fact been studied in the AFCAPAS/TEXCAPS trial. Lovastatin, at 20mg to 40mg a day, when used in over 6,000 patients with low HDL-cholesterol was found to produce a highly significant reduction in incidence of first coronary event after a mean follow-up of 5.2 years.<sup>5</sup> However, there was no difference in the overall mortality between the treated and placebo group, as these patients are not at high risk of developing coronary deaths. Thus it is useful to provide this bit of data to Mr R, that we can reduce his incidence of cardiac disease, but the cost and inconvenience of therapy will not actually prolong his life, since overall, his risk of dying of heart disease is not high.

Low HDL-cholesterol levels may occur secondarily to physical inactivity, very high carbohydrate intake, obesity

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and certain drugs such as beta-blockers. Mr R is not a smoker or diabetic, the other common causes of low HDL levels. It may be important to encourage Mr R to lose weight and increase physical activity, as well as to consider using a more lipid neutral antihypertensive agent. There is increasing evidence that exercise and physical activity do reduce clinical cardiovascular disease.

## REFERENCES

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Editor's note: *What is your view regarding the answer provided for this Q&A? Let's hear your views!*

## RETINAL IMAGES (Page 39): Answers

Figure 2: Moderate nonproliferative diabetic retinopathy (a. cotton wool spots, b. hard yellow exudates).

Figure 3: Severe nonproliferative diabetic retinopathy (a. dot and blot haemorrhages)

Figure 4: Proliferative diabetic retinopathy (a. neovascularisation near optic disc, b. fibrovascular proliferation along the arcades).

Figure 5: Circinate maculopathy (hard exudates surrounding macula)

### Quotable Quotes

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"If, as I believe, primary care provides the essential underpinning for any rationally balanced health service why do so many in positions of academic power and influence have a negative opinion of general practitioners and family physicians? In my view, this negativity is because primary care investigators, as opposed to their biomedical colleagues, have contributed little fundamental knowledge on the origins and natural history of disease."

*White KL. Fundamental research at primary care level. Lancet. 2000;355:1904-6*

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"When a physician makes observations and records his experience he not only adds to our body of knowledge, he also increases his self-knowledge. The experience which he analyzes will never be the same to him as it was before. The discipline of having to define certain terms and concepts will mean that these terms and concepts will forever after have a new and more exact meaning. The discipline of having to make exact and careful observations will make his observations of all things more exact. The need to think precisely and logically about a problem will make him less open to deception, less prey to the fallacies that pervade medicine, and less liable to self deception."

*McWhinney IR. The family physician as a research worker. Can Fam Physician. 1969;Sept:37-39*

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"There are only a handful of ways to do a study properly but a thousand ways to do it wrong."

*Sackett DL. Rational therapy in the neurosciences: the role of the randomized trial. Stroke. 1986;17:1323-9*