Coronary heart disease and dyslipidaemia in Hong Kong: a survey of the knowledge and opinions of medical practitioners

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Abstract

A questionnaire covering cardiovascular epidemiology, hyperlipidaemia treatment and laboratory tests attracted 460 replies from 4,100 Hong Kong doctors. Most knew of the low cholesterol levels and low rates of coronary heart disease (CHD) in China. Many did not know about the high levels of CHD in Singapore, the effects of renal disease or alcohol on lipids, and the atherosclerosis regression produced by lowering cholesterol. There was limited access to HDL and LDL cholesterol estimations and an inadequate knowledge of laboratory test limitations. Eighty percent preferred the development of Hong Kong Guidelines for the detection and management of lipid disorders ahead of US and European Guidelines. Ninety percent supported combined individual and population strategies to reduce CHD mortality and morbidity. Some deficiencies in the knowledge of dietary and drug treatment were evident. The study clearly demonstrated (1) deficiencies in knowledge requiring further education and (2) the desire for local Lipid Management Guidelines.

Keywords: Dyslipidaemia; Epidemiology

Introduction

In order to design and implement optimal strategies for prevention of coronary heart disease (CHD) in Hong Kong, it is necessary to have firstly information about the knowledge base and opinions of Hong Kong doctors and secondly a local cardiovascular epidemiology data base. This survey was designed to provide information on the first issue so that appropriate further education programmes can be designed to consolidate knowledge of doctors in the area of coronary heart disease prevention and particularly the role of dyslipidaemias (disorders of lipids and lipoproteins including hyperlipidaemias).

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Methods

A multiple-choice questionnaire (Appendix) was mailed to 4,100 doctors encompassing all medical practitioners (2,000 general practitioners, 1,800 hospital doctors and 300 doctors specializing in internal medicine) in the private and government sectors of Hong Kong. There were 20 questions covering cardiovascular epidemiology and risk factors, hyperlipidaemia treatment indications, laboratory tests, diet and lipid lowering drugs. While the questions were mainly aimed at ascertaining the awareness of current information on lipid disorders relevant to Hong Kong, opinions were specifically sought on whether overseas or local guidelines for hyperlipidaemia detection and management were preferred. Opinions were also

sought on approaches to detection of hyperlipidaemia and on preferences for individual vs population strategies in management.

Results

A total of 460 replies were received after an extension of the time allowed for reply and reminders to general practitioners and doctors practising in internal medicine. Table 1 shows the breakdown of respondents by practice type and age. Approximately half of those surveyed and half of the respondents were general practitioners. The remaining respondents were specialists and hospital or university doctors of various grades. For analysis, the responses have been grouped by topics. As the replies were in most cases similar for each category of doctor and the number in some categories were quite small, we have highlighted only those situations in which there were obvious differences.

Table 1. Coronary heart disease and dyslipidaemia survey.

Respondents	
Total	460
By Practice	
Private Hospital	13
General Practitioners	233
University Doctor	22
SMO or above	52
MO or below	88
Cardiologists	15
Endocrinologists	5
Specialists in other fields	32
By Age	
20–29 years	67
30–39 years	158
40–49 years	111
50–59 years	88
Over 60 years	34
No answer	2

Epidemiology

Most respondents (97%) correctly recognized that the 'incidence' (number of new cases per year) of CHD is increasing in Hong Kong. As this may be partly due to an aging population, comparisons from year to year are usually made using 'age standardized CHD mortality'. This also allows valid comparison between countries. Using age specific death rate data for Hong Kong, the rise is less dramatic and there may even be some reduction occurring in older men.[1] Most respondents (62%) believed that in Hong Kong, age standardized mortality rates were increasing.

While most correctly believed that CHD in Hong Kong was less common than in Australia and the USA and more common than in Mainland China, they were unaware of the dramatic increase in age standardized CHD mortality in Singapore,[2] which now exceeds that in Australia and the USA. University based doctors were slightly better informed on epidemiology than the other groups.

Forty percent believed that the mean cholesterol level in Hong Kong was in the range 4.5 to 5.0 mmol/L and 40% that it was 5.0 to 5.5 mmol/L. From locally available data, it is in the range 5.0 to 5.5 mmol/L.[3] For Mainland China, 40% believed it was 4.0 to 4.5 mmol/L and 38% that it was 4.5 to 5.0 mmol/L. Actual data shows levels of 4.0 to 4.5 mmol/L.[4]

Risk factors

There was a high awareness of smoking and diabetes mellitus as cardiovascular risk factors. Twenty-two percent of the respondents (and 46% of University doctors) were not aware that the combination of high triglycerides and a low HDL cholesterol increases cardiovascular risk.[5] Many (52%) did not know that there is a strong association between renal failure and dyslipidaemia. In this group of patients, who have a high rate of cardiovascular disease, high triglycerides and low HDL levels are common,[6] and in those undergoing continuous ambulatory peritoneal dialysis (CAPD) or transplantation, hypercholesterolaemia may also be a problem.[7,8] Only half (53%) recognized that alcohol may affect lipid levels. In fact alcohol raises triglycerides significantly[9] but small amounts may have a protective effect by increasing HDL.[10]

Established benefits from lipid lowering treatment and their implications for patient management

There is considerable evidence that reduction of the serum cholesterol level and especially the LDL cholesterol level is beneficial in preventing coronary events. The evidence for benefit in secondary prevention (i.e. treatment of patients with established coronary heart disease) is even better than in primary prevention (treatment of patients who are not known to have CHD but have hypercholesterolaemia). The majority (80%) were aware that cholesterol lowering will reduce the frequency of subsequent acute myocardial infarctions and cardiovascular mortality. Overall only 42% believed that cholesterol lowering will lead to atherosclerosis regression; however, 65% of specialists were aware of this. Recent clinical regression studies using serial coronary angiograms have consistently demonstrated that the progression of atherosclerosis can be halted and that regression

can be induced with vigorous cholesterol lowering therapy using diet, drugs or ileal bypass surgery.[11] Recent data shows that such vigorous treatment is also associated with a reduction in clinical events. Only 9% of the respondents believed that low cholesterol levels cause cancer. On the balance of current evidence, it is unlikely that there is any such cause-effect relationship.[12]

On the basis of current knowledge the respondents were asked to indicate whether they would treat vigorously with lipid lowering drugs in a number of specific situations. Most (85%) would aggressively treat a 53-year-old man who has had a recent myocardial infarction and whose cholesterol level is 6.8 mmol/L. Sixty percent would treat a 22-year-old man with a cholesterol level of 6.8 mmol/L although current recommendations should be conservative (diet only) treatment at this age unless cholesterol levels are higher or there are other risk factors present.[13] Despite the existence of multiple risk factors, 39% would not treat a 45-year-old woman at high risk with non-insulin dependent diabetes, cholesterol 6.5 mmol/L, triglycerides 2.3 mmol/L and HDL cholesterol 0.8 mmol/L. In such cases, good glycaemic control results in some but not always complete correction of the lipid abnormalities with high triglycerides and low HDL cholesterol often persisting. Increasingly more such abnormalities are being treated.[14] In the case of a 69-year-old asymptomatic woman with a cholesterol level of 6.9 mmol/L, 80% took a conservative approach.

In general, most respondents indicated that they would consider using lipid lowering drugs if diet alone provided inadequate lipid lowering in the presence of existing CHD (87%) or in the presence of other risk factors such as hypertension, diabetes and smoking (91%). An appropriate conservative approach was preferred in patients over 70 years of age, in the presence of heart failure or if the HDL cholesterol level was over 1.5 mmol/L. University based doctors were overall somewhat more conservative in their approach to lipid lowering drug usage.

The availability and usefulness of laboratory tests

Surprisingly HDL cholesterol was not available to 26% of the respondents including both general practitioners and hospital based doctors. LDL cholesterol, which is calculated from the cholesterol, triglycerides and HDL cholesterol results, was available to only 56%. These parameters are fundamental in the diagnosis and management of dyslipidaemia and feature strongly in decision algorithms in overseas guidelines for management of lipid disorders (in USA, Europe and Australia). The majority of specialists, university doctors and senior medical officers were aware of this but the general practitioners less so.

There were limitations in the appreciation of the limitations of laboratory test results. A little over half (53%) of the respondents recognized that more than one test was generally necessary before making a change in treatment. This was expected because 61% appreciated that an individual's cholesterol level could vary widely with time. Conversely nearly 50% were happy to change treatment on the basis of a single test. It appears that further education on the limitations of cholesterol analysis and the biological variation of lipids is required. In this aspect, university doctors and specialists were better informed.

About a third (37%) agreed that in a good laboratory the same sample re-analyzed several times may give cholesterol results ranging from 4.7 to 5.3 mmol/L with a mean of 5.0 mmol/L. These results indicate a coefficient of variation of ±3%, i.e., 95% of repeated results lie between 6% of the mean value of 5 mmol/L. The National Cholesterol Education Programme (NCEP) in the USA recommends this level of assay reproducibility or better and accuracy (deviation from the true value) within ±3%. It is probable that many doctors are not fully aware of the capabilities and limitations of laboratories performing cholesterol and other assays and the implications of these for use of test results in patient management.

Surprisingly only 34% of doctors appreciated that it is not necessary to fast before taking blood for cholesterol measurement. Most (88%) were aware that reproducibility of triglycerides measurements and day to day variations differ from those of cholesterol. Presumably they appreciated that the variations are greater for triglycerides. 73% of the doctors disagreed on the length of the fast required for triglyceride estimations. Presumably they appreciated that fasting was required and only disagreed on the length of the fast. It is generally agreed that a 15 hour fast is adequate and optimum.

Treatment guidelines — local vs overseas

Guidelines on the detection and treatment of lipid abnormalities are available in the USA (National Cholesterol Education Program),[13] Europe (Recommendations of the European Atherosclerosis Society, EAS)[15] and Australia (National Heart Foundation of Australia Guide to Plasma Lipids for Doctors).[16] Eighty percent of the respondents preferred to have guidelines specifically for Hong Kong and most of the rest opted for unified guidelines for countries in this region. There was negligible support for local use of the NCEP (3%) or EAS (2%) guidelines.

Over 90% supported a combination of the individual and population strategies to reduce coronary heart disease morbidity and mortality in the community. The individual strategy involves the detection and intensive treatment of individuals at high risk

such as those with cholesterol levels over 7.5 mmol/L or severe hypertension while the population strategy involves advice on diet, smoking cessation and life style for the whole population. This combination of approaches is favoured in other countries.[15,17]

Detection of high risk individuals

The respondents were asked which one or more of the following strategies they would support to detect individuals at high risk of coronary artery disease who would benefit from appropriate advice and treatment:

(a) *Mass screening* — widespread testing for cholesterol levels (10% support) and somewhat more favoured by general practitioners.
(b) *Opportunistic screening* — testing individuals who attend your practice primarily for other problems (24% support).
(c) *Case finding* — the testing of individuals known to have other risk factors and or adverse family histories of coronary heart disease (66% support).
(d) All of these approaches (29% support).

All of these approaches have their benefits and drawbacks. Case finding provides the greatest return for the effort expended and detects a group of subjects more likely to be motivated to take action. This approach does leave undetected substantial numbers of individuals who will not be adequately treated by the population-lifestyle approach.

Opportunistic screening is useful in communities where the proportion of people attending their general practitioner over a period of time is quite high. In this context the testing can be done along with patient education and counselling.

There has recently been a move away from a strong advocacy of mass screening and instead the population-lifestyle approach is preferred. If it is implemented it should be used with community awareness and education programmes.

The approach a community adopts will depend on its health priorities and the amount of money it is willing to spend. The initial test used will also depend on the strategy adopted. For mass screening, cholesterol (non-fasting) would be appropriate while for case finding, measurement of fasting cholesterol, triglycerides and HDL cholesterol as the initial test could be justified.

Diet in the treatment of hyperlipidaemia

Over 90% of doctors realized that dietary modification should be the first step for the management of hyperlipidaemia in patients and that dietary management should be continued along with drug treatment. They also recognized that a combination of diet and physical exercise is more effective in weight reduction than diet alone.

Most respondents possessed some general nutrition knowledge, i.e., to avoid certain foods containing animal fats and cholesterol, and to increase the consumption of fruit and vegetables to reduce blood cholesterol. Over 60% knew that diet intervention alone can reduce cholesterol by as much as 25%. Less well known were potential benefits from vegetable oils, fish and rice. All of these are under further investigation for their benefits.

Pharmacological treatment of hyperlipidaemia

There were some misunderstandings on appropriate drug treatment. Thirty-two percent of the respondents, predominantly general practitioners, believe that statins (lovastatin, pravastatin and simvastatin) are as effective for treating triglycerides as for treating hypercholesterolaemia. In fact statins have a relatively small triglyceride lowering effect in comparison to fibrates (gemfibrozil, bezafibrate, fenofibrate). Seventy-six percent believe that gemfibrozil is less effective than statins in correcting the lipid abnormalities associated with non-insulin dependent diabetes, i.e., most commonly high triglycerides and low HDL. While gemfibrozil is usually more effective, those NIDDM patients who have predominant hypercholesterolaemia may respond better to statins.

One-third (34%) did not appreciate that thiazides and beta blockers may adversely affect lipid levels. The combined use of statins and gemfibrozil is not generally recommended because of a higher risk of muscle side effects including rhabdomyolysis.[15] Such combined therapy should only be used by experienced physicians and the patient in such cases should be monitored closely. It was alarming that only 40% of the respondents were aware of the dangers of this combination.

Discussion

This survey was carried out to determine information about the knowledge base and opinions of Hong Kong doctors in the areas of cardiovascular epidemiology and risk factors, hyperlipidaemia treatment and laboratory tests. The ultimate objective is to utilize this information, along with appropriate cardiovascular epidemiological data being collected separately, to design and implement optimal strategies for prevention of coronary heart disease in Hong Kong. This disease is now the single most common cause of death in Hong Kong, killing 3,181 people in 1992, compared with 2,761 for the commonest form of cancer, cancer of the lung.[18] The 11% response rate was disappointing and raises questions about how representative

the responses are of the wider doctor population. It seems likely that the more highly motivated and informed members of the profession were more likely to respond. If so the average standard of knowledge in this community is probably below that of the respondents.

Despite the limitations of the low response, the answers provided some very clear messages. Most respondents were unaware of the dramatic increases in CHD in Singapore, where CHD age standardized mortality now exceeds that of the USA and Australia.[2] This rise with increasing economic prosperity sends out warning signals to the rest of Asia and we in Hong Kong cannot ignore these. Most respondents recognized that in Mainland China cholesterol levels and CHD are both low.[4] This could change markedly as diet and lifestyles change with economic growth. Preliminary data on cholesterol levels in Hong Kong[3] shows levels comparable to those in the USA in the late 1970s when CHD there had not yet shown its dramatic decline.[19] More detailed studies are needed locally.

In considering lipids more specifically, half of the respondents were unaware of the links between renal disease and hyperlipidaemia, the triglyceride raising effects of alcohol and that the combination of high triglycerides and a low HDL cholesterol increases cardiovascular risk.[5] Importantly nearly 60% were unaware that cholesterol lowering can produce regression of atherosclerosis.[11] This consistent finding has greatly influenced the approach to hyperlipidaemia, justifying both primary prevention (lipid lowering in asymptomatic individuals) and especially secondary prevention (lipid lowering in individuals with established coronary artery disease). The latter approach was previously considered to be of little use but the recent data shows not only reversal of atherosclerosis but dramatic reductions in further clinical events in such patients.

Twenty-six percent of the respondents did not have HDL cholesterol assays available to them and only half could obtain LDL cholesterol levels (usually calculated from total and HDL cholesterol and fasting triglyceride levels). These measurements are fundamental to the management of lipid disorders and are major components of management guidelines elsewhere.[13, 15, 16] Limitations inherent in laboratory analysis, i.e., analytical and biological variation, were only appreciated by half. Only one-third knew that it is not necessary to fast before taking blood for a cholesterol measurement. In contrast a 12 to 14 hour fast is needed before a triglyceride measurement. There is a clear need for more laboratories, including those of some larger hospitals, to measure HDL cholesterol and for education of doctors on the optimal way to use lipid measurements in patient management.

Detailed guidelines for the detection and management of lipid disorders have been produced in the USA, Europe and Australia.[13, 15, 16] Very few respondents favoured the adoption of these in Hong Kong, preferring instead (80%) to have guidelines produced specifically for Hong Kong. In view of local differences in diet and available lipid measurements and the low levels of CHD in the local community, despite lipid levels comparable to those in the USA 15 years ago,[19] it appears to the authors that it will be very appropriate to develop local Hong Kong guidelines. The overseas guidelines can serve as valuable resource documents but cannot be applied here without considerable modification.

To prevent CHD, it is necessary to have a combination of (a) population-wide diet and lifestyle approaches (small beneficial changes in the various risk factors in many individuals), and (b) detection and treatment of individuals at high risk of CHD. These include individuals with cholesterol levels above 7.5 mmol/L, severe hypertension, diabetes, CHD or a family history of premature CHD. Such individuals benefit insufficiently from the population strategy. This combination of approaches is favoured in most countries[15, 17] and was supported by over 90% of the respondents. For detection of high risk individuals, individual case finding was strongly supported ahead of mass screening. As already discussed in the results section, the approach to screening will depend on the health priorities of the community. Countries such as Australia have favoured the population-lifestyle approach ahead of mass screening. Whatever is done there must be appropriate community based education programmes and these must be developed on the basis of good local background information about risk factors, diet and lifestyle.

In patient management, there were gaps evident in knowledge about diet and the correct use of drugs. Specifically one-third did not recognize that HMG CoA reductase inhibitors are not useful in treatment of hypertriglyceridaemia and 40% were unaware of potential harmful interactions of HMG CoA reductase inhibitors and fibrates when used in combination. In the specific cases presented for treatment, the majority (60%) adopted a much more aggressive treatment than is now recommended overseas for a young man with asymptomatic hypercholesterolaemia.[13] In contrast the approach to a middle-aged woman with diabetes mellitus and distinct lipid abnormalities was too conservative for 40% of the respondents.[14]

There were only limited differences in the responses between the different groups of practitioners. University doctors were better informed on epidemiology and the use of laboratory tests, although they were not as aware as the other doctors on the hypertriglyceridaemia low HDL issue. They were generally more conservative in the use of drug treatment and

better informed about the correct use of drugs and their potential interactions. Specialists were the one group who were more aware of atherosclerosis regression. General practitioners performed comparably with most other groups but were somewhat more in favour of mass screening for hypercholesterolaemia than the other doctors.

In conclusion there is a clear perception of a need for local Hong Kong guidelines for detection and management of lipid disorders and a need for improvements in the provision and understanding of laboratory tests. Further education is needed on secondary hyperlipidaemias, diet and drug therapy and on which specific groups of individuals need testing and treatment.

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Appendix: Coronary heart disease in Hong Kong

Please indicate with a cross in the appropriate box the correct answers to the questions. There may be one or more correct or preferred answer per question.

1) For Coronary heart disease (CHD) in Hong Kong
   a) The incidence (number of new cases per year) is increasing ☐
   b) The age standardised mortality (a statistic which allows comparison between true CHD death rates from year to year or country to country) is rising ☐
   c) There are no data ☐

2) Coronary heart disease in Hong Kong
   a) Is much less common than in Singapore ☐
   b) Is much less common than in Australia and the USA ☐
   c) Is as common as in mainland China ☐

3) The average serum cholesterol in the USA is around 5.2 mmol/L.
   What do you think is the average serum cholesterol level in Hong Kong?
   a) 4.0–4.5 ☐
   b) 4.5–5.0 ☐
   c) 5.0–5.5 ☐
   d) 5.5–6.0 ☐
   e) 6.0–6.5 ☐

4) What do you think is the average serum cholesterol level in mainland Chinese cities?
   a) 4.0–4.5 ☐
   b) 4.5–5.0 ☐
   c) 5.0–5.5 ☐
   d) 5.5–6.0 ☐
   e) 6.0–6.5 ☐

5) Which of the following are major risk factors for Coronary heart disease?
   a) Smoking ☐
   b) High triglycerides accompanied by low HDL cholesterol ☐
   c) Diabetes mellitus ☐
   d) Alcohol excess ☐
   e) Obesity ☐

6) Which of the following would you treat vigorously with lipid lowering therapy including drugs?
   a) A man of 53 who has recently recovered from an acute myocardial infarction and whose cholesterol level is 6.8 mmol/L ☐
   b) A man of 22 with a cholesterol level of 6.8 mmol/L ☐
   c) A woman of 45 with non insulin dependent diabetes, cholesterol 6.5 mmol/L, triglycerides 2.3 mmol/L and HDL cholesterol 0.8 mmol/L ☐
   d) A 69 years old woman who is well but has a cholesterol level of 6.9 mmol/L ☐

7) If a patient already has symptomatic Coronary heart disease it is no use giving lipid lowering treatment?

I Agree ☐
I Don't agree ☐

8) Primary prevention is:

a) Treatment of risk factors for CHD such as hyperlipidaemia in asymptomatic individuals ☐
b) The management of primary hyperlipidaemia
i.e. that due to dietary and or genetic factors ☐

9) Causes of hypelipidaemia which need to be checked for when a patient is found to have high lipid levels are:

a) Diabetes mellitus ☐
b) Renal failure ☐
c) Thyrotoxicosis ☐
d) AIDS ☐
e) Alcohol excess ☐

10) Reduction of cholesterol levels has been shown:

a) To reduce the frequency of subsequent acute myocardial infarctions ☐
b) To reduce cardiovascular mortality ☐
c) To cause reversal of atherosclerosis ☐
d) to increase cancer due to low cholesterol levels ☐

11) To reduce Coronary heart disease morbidity and mortality you would support

a) Detection and intensive treatment of individuals at high risk such as those with cholesterol levels over 7.5 mmol/L or severe hypertension (the individual strategy) ☐
b) Advice on diet, smoking cessation and life style for the entire population (the population strategy) ☐
c) A combination of these two strategies ☐

12) To detect individuals at high risk of coronary artery disease who could benefit from appropriate advice and treatment you would support which of the following:

a) *Mass screening* — Wide spread testing for cholesterol levels ☐
b) *Opportunistic screening* — testing individuals who attend your practice primarily for other problems ☐
c) *Case finding* — the testing of individuals known to have other risk factors and or adverse family histories of Coronary heart disease ☐
d) All of the above ☐

13) As your choice for the initial blood test you would usually prefer

a) Cholesterol ☐
b) Cholesterol and HDL cholesterol ☐
c) Cholesterol and triglycerides ☐
d) All three ☐

14) In interpreting laboratory tests which of the following is correct?

a) In a good laboratory the same blood sample if reanalysed several times (reproducibility) may give cholesterol results ranging from 4.7 to 5.3 mmol/L ☐
b) An individual's cholesterol level may vary by ±10% over a period of a month ☐
c) It is not necessary to fast before a cholesterol measurement ☐
d) The reproducibility of triglycerides measurements and the day to day variations are similar to those for cholesterol ☐
e) A 24 hours fast is required to obtain a meaningful triglyceride measurement ☐
f) Tests on multiple occasions are required before a change in therapy ☐

15) Which of the following tests are readily available to you and which do you consider them useful in your practice:

	Available	Useful
a) Cholesterol	☐	☐
b) Triglycerides	☐	☐
c) HDL Cholesterol	☐	☐
d) Apo A1	☐	☐
e) Apo B	☐	☐
f) Lipoprotein electrophoresis	☐	☐
g) LDL Cholesterol	☐	☐

16) In the management of a patient with hyperlipidaemia

a) Diet is the first step ☐
b) Diet may reduce cholesterol levels by 10–25% ☐
c) Diet should be discontinued if drugs are used after diet alone does not reduce cholesterol sufficiently ☐
d) The combination of diet and exercise is more effective in weight reduction than diet alone ☐
e) The effect of diet and weight loss is greater for triglycerides than for cholesterol ☐

17) In advising on dietary measures to lower lipid levels

a) Intake of animal fats should be reduced ☐
b) Vegetable oils are effective ☐
c) Fruit and vegetables have little effect ☐
d) Fish has beneficial effects over and above any reduction of lipid levels ☐
e) Shellfish are neutral ☐
f) Rice (unfried) is a useful part of the diet ☐

18) If diet alone has produced inadequate cholesterol lowering in which of the following situations would you use lipid lowering drugs:

a) In patients over 70 years of age ☐
b) In the presence of heart failure ☐
c) In the presence of existing Coronary heart disease ☐
d) If the level of HDL cholesterol is over 1.5 mmol/L ☐
e) In the presence of other risk factors such as hypertension, diabetes and smoking ☐

19) Which of the following comments on lipid level modifying drugs are correct?

a) Lovastatin, pravastatin and simvastatin are as effective for hypertriglyceridaemia as for hypercholesterolaemia ☐

b) In the lipid abnormalities associated with non insulin dependent diabetes statins are usually less effective than gemfibrozil ☐

c) Thiazides and beta-blockers may adversely affect lipid levels ☐

d) ACE inhibitors and calcium channel blockers may adversely affect lipid levels ☐

e) The combined use of statins and gemfibrozil is not usually recommended ☐

20) Guidelines for detection and management of hyperlipidaemia are now available in Europe, the USA, Australia and New Zealand. Which of the following would you prefer for Hong Kong?

a) Development of unified guidelines for countries in this region ☐

b) Development of guidelines specifically appropriate for Hong Kong ☐

c) Use of the USA guidelines ☐

d) Use of the European guidelines ☐

e) Use of Australian guidelines ☐

21) Age (years)

☐ 20–29 ☐ 30–39
☐ 40–49 ☐ 50–59
☐ >60

22) Sex ☐ Male ☐ Female

23) Type of Practice ☐ Private ☐ Hospital
☐ GP
☐ Specialist ☐ Endocrinology
☐ Cardiology
☐ Others, please specify
☐ _____

☐ Health Authority ☐ University Doctor
☐ SMO or above
☐ MO or below

24) Undergraduate training

☐ H.K.
☐ Overseas
☐ Both of the above

25) Post graduate training

☐ H.K.
☐ Overseas
☐ Both of the above

Correct answers to questionnaire:

1. (a)
2. (a), (b)
3. (c)
4. (a)
5. (a), (b), (c)
6. (a), (c)
7. (b)
8. (a)
9. (a), (b), (c)
10. (a), (b), (c)
11.* (c)
12.* (b), (c)
13.* (a)
14. (a), (b), (c), (f)
15.* Information sought
16. (a), (b), (d), (e)
17. (a), (b), (d), (f)
18. (c), (e)
19. (b), (c), (e)
20.* Opinion sought

*There is no specific correct answer. The authors' preferred answer is shown where applicable.