READINGS

- A selection of ten current readings on Hyperlipidemia available as free full-text

CME CATEGORY IIIA – SELF STUDY

A SELECTION OF TEN CURRENT READINGS ON HYPERLIPIDEMIA AVAILABLE AS FREE FULL-TEXT

Selection of readings made by A/P Prof Goh Lee Gan

The URLs of the articles are given below the reference.

NCEP ADULT TREATMENT PANEL III GUIDELINES IN ELDERS

Reading 1

Morgan JM, Capuzzi DM. Hypercholesterolemia. The NCEP Adult Treatment Panel III Guidelines. Geriatrics. 2003 Aug;58(8):33-8; quiz 41.

http://www.geri.com/geriatrics/data/articlestandard/geriatrics/352003/67753/article.pdf (pdf file)

Jefferson Medical College, Thomas Jefferson University, Cardiovascular Disease Prevention Center, Jefferson Heart Institute, Philadelphia, USA.

ABSTRACT

Coronary heart disease (CHD) is a significant cause of morbidity and mortality in older patients. Therefore, its treatment and prevention is vital to improving the length and quality of life for the geriatric population at large. Clinical trial data have demonstrated that patients age 65 and older derive the same benefit from blood cholesterol reduction as younger adults. As a result, the National Cholesterol Education Program (NCEP) Adult Treatment Panel III (ATP III) recommends appropriate therapeutic lifestyle changes and drug therapy for older individuals with established CHD or for those at high risk for CHD. Drug therapy in this population, while safe, requires careful monitoring and dose adjustment due to potentially altered drug metabolism and concomitant medications. These factors lead to use of lower starting doses of lipid-lowering medications in older patients. Prudent individualized evaluation and customized therapy provide optimal cardiovascular outcomes.

STATIN USE IN HYPERLIPIDEMIA

Reading 2

Aronow WS. Hypercholesterolemia. The evidence supports use of statins. Geriatrics. 2003 Aug;58(8):18-20, 26-8, 31-2.

http://www.geri.com/geriatrics/data/articlestandard/geriatrics/352003/67737/article.pdf

ABSTRACT

Using statins to treat older men and women with coronary artery disease (CAD) and hypercholesterolemia reduces the risk of all-cause mortality, cardiovascular mortality, coronary events, coronary revascularization, stroke, intermittent claudication, and congestive heart failure. The target serum low-density lipoprotein (LDL) cholesterol level is <100 mg in older patients with CAD, prior stroke, peripheral arterial disease, extracranial carotid arterial disease, abdominal aortic aneurysm, diabetes mellitus, and the metabolic syndrome. Statins are also effective in reducing cardiovascular events in older persons with hypercholesterolemia without cardiovascular disease. Consider using statins in older persons without cardiovascular disease but with a serum LDL cholesterol less than 130 mg/dL, or a serum high-density lipoprotein cholesterol <50 mg/dL. Data from the Heart Protection Study favour treating patients at high risk for vascular events with statins regardless of age or initial serum lipids.

HYPERTENSION, LIPIDS & DIABETES MELLITUS

Reading 3

Watkins PJ. Cardiovascular disease, hypertension, and lipids.
***BMJ* 2003;326:874-876 (19 April)**

http://bmj.bmjjournals.com/cgi/content/full/326/7394/874
http://bmj.bmjjournals.com/cgi/reprint/326/7394/874 (pdf file)

King's Diabetes Centre, King's College Hospital, London (peter.watkins1@virgin.net).

SUMMARY

Hyperlipidaemias are common in patients with diabetes and further increase the risk of ischaemic heart disease, especially in type 2 diabetes. Detection and control of hyperlipidemia can reduce myocardial infarction, coronary deaths, and overall mortality. Indeed, even when low density lipoprotein (LDL) cholesterol concentration is normal or slightly raised in type 2 diabetes (the major abnormalities being low HDL cholesterol and high triglyceride concentrations), the LDL particles may be qualitatively different and more atherogenic than those in non-diabetic patients.

Screening for dyslipidemia is an essential aspect of the annual review. If the lipid profile is entirely normal, further screening could be postponed for three to five years unless circumstances change. Patients with a raised triglyceride concentration should have it confirmed when fasting.

MANAGEMENT OF DYSLIPIDEMIA

Reading 4

Hilleman DE. Reducing cardiovascular risk in patients with type 2 diabetes: Management of dyslipidemia. Formulary 2003;38:478-497.

http://formulary.adv100.com/formulary/data/articlestandard/formulary/342003/66754/article.pdf

Creighton University Cardiac Center in Omaha, Nebraska. USA. Email: hilleman@creighton.edu.

ABSTRACT

Patients with diabetes are at extremely high risk for cardiovascular disease. Because glucose control is associated with only modest reductions in macrovascular complications, efforts must be made to specifically target other cardiovascular risk factors. Diabetes is associated with a characteristic lipid profile: low high-density lipoprotein cholesterol (HDL-C) and high triglyceride levels with or without high low-density lipoprotein cholesterol (LDL-C) levels. This profile is also found in patients with early-onset coronary heart disease and correlates with increased atherogenesis. Multiple clinical trials have demonstrated that lipid-modifying therapy in patients with diabetes decreases cardiovascular risk. Management targeting all lipid abnormalities may represent the best treatment strategy since many patients with diabetes do not have elevated LDL-C levels. Combining lipid-modifying agents is also an attractive option for normalizing multiple lipid abnormalities.

MONOGENIC HYPERCHOLESTEROLEMIA

Reading 5

Radar DJ, Cohen J and Hobbs HH. Monogenic hypercholesterolemia: new insights in pathogenesis and treatment. J Clin Invest. 2003 June 15; 111 (12): 1795–1803.

http://www.pubmedcentral.gov/articlerender.fcgi?tool=pmcentrez&artid=161432
http://www.pubmedcentral.gov/picrender.fcgi?artid=161432&action=stream&blobtype=pdf (pdf file)

Department of Molecular Genetics, University of Texas Southwestern Medical Center, 5323 Harry Hines Boulevard, Dallas, Texas 75390, USA. Phone: (214) 648-6724; Fax: (214) 648-7539; E-mail: Helen.Hobbs@UTSouthwestern.edu..

SUMMARY

The careful clinical characterization of patients with genetic forms of severe hypercholesterolemia has played a critical role in the historic linkage of hypercholesterolemia to atherosclerosis. Elucidation of gene defects that cause severe hypercholesterolemia has provided molecular entrées into the biosynthetic and regulatory pathways that produce and eliminate cholesterol and has led to the development of potent pharmacological agents that dramatically reduce circulating levels of cholesterol.

OVERWEIGHT & OBESITY AS RISK FACTORS

Reading 6

Bertsias G, Mammas I, Linardakis M, Kafatos A. Overweight and obesity in relation to cardiovascular disease risk factors among medical students in Crete, Greece. BMC Public Health. 2003; 3(1): 3.

http://www.pubmedcentral.gov/articlerender.fcgi?tool=pmcentrez&artid=140012
http://www.pubmedcentral.gov/picrender.fcgi?artid=140012&action=stream&blobtype=pdf (pdf file)

Preventive Medicine and Nutrition Clinic, Department of Social Medicine, Faculty of Medicine, School of Health Sciences, University of Crete, PO Box 1393, Heraklion, Crete, Greece

ABSTRACT

Background: Recent data indicate increasing rates of adult obesity and mortality from cardiovascular disease (CVD) in Greece. No data, however, are available on prevalence of overweight and obesity in relation to CVD risk factors among young adults in Greece.

Methods: A total of 989 third-year medical students (527 men, 462 women), aged 22 ± 2 years, were recruited from the University of Crete during the period 1989–2001. Anthropometric measures and blood chemistries were obtained. The relationships between obesity indices (body mass index [BMI], waist circumference [WC], waist-to-hip ratio [WHpR], waist-to-height ratio [WHtR]) and CVD risk factor variables (blood pressure, glucose, serum lipoproteins) were investigated.

Results: Approximately 40% of men and 23% of women had BMI = 25.0 kg/m2. Central obesity was found in 33.4% (average percentage corresponding to WC = 90 cm, WHpR = 0.9 and WHtR = 50.0) of male and 21.7% (using WC = 80 cm, WHpR = 0.8, WHtR = 50.0) of female students. Subjects above the obesity indices cut-offs had significantly higher values of CVD risk factor variables. BMI was the strongest predictor of hypertension. WHtR in men and WC in women were the most important indicators of dyslipidaemia.

Conclusion: A substantial proportion of Greek medical students were overweight or obese, obesity status being related to the presence of hypertension and dyslipidaemia. Simple anthropometric indices can be used to identify these CVD risk factors. Our results underscore the need to implement health promotion programmes and perform large-scale epidemiological studies within the general Greek young adult population.

EFFECTIVENESS OF LIPID LOWERING DRUGS IN PRACTICE

Reading 7

Hippisley-Cox J, and Coupland C. Cross sectional survey of effectiveness of lipid lowering drugs in reducing serum cholesterol concentration in patients in 17 general practices. BMJ. 2003 March 29; 326 (7391): 689.

http://bmj.bmjjournals.com/cgi/reprint/326/7391/689

Division of General Practice, Nottingham University, Nottingham NG7 2RD
Correspondence to: J Hippisley-Cox julia.hippisley-cox@nottingham.ac.uk

ABSTRACT

Objective: To compare the effectiveness of lipid lowering drugs in lowering serum cholesterol concentrations.

Design: Cross sectional study.

Setting: 17 practices within 17 primary care groups in Trent region, United Kingdom.

Participants: Patients aged 35 years or over taking lipid lowering drugs and with at least two serum cholesterol concentrations recorded on computer.

Main outcome measures: Proportion of patients achieving serum cholesterol concentration of less than 5 mmol/l and mean percentage reduction in serum cholesterol concentration.

Conclusion: The ability of individual statins to lower serum cholesterol concentration varied, with atorvastatin and simvastatin being the most effective. The percentage reductions agreed with those of randomised controlled trials indicating likely benefits in unselected patients in primary care. As the initial serum cholesterol concentrations were higher than those in randomised controlled trials, target serum cholesterol values of less than 5 mmol/l may be unrealistic even for patients taking the most efficacious drugs. Also, the higher initial levels could mean that the absolute reduction in cardiovascular risk in primary care patients is greater than thought.

RATIONAL PRESCRIBING IN GENERAL PRACTICE

Reading 8

Fretheim A, Oxman AD, Treweek S, Bjørndal A. Rational Prescribing in Primary Care (RaPP-trial). A randomised trial of a tailored intervention to improve prescribing of antihypertensive and cholesterol-lowering drugs in general practice [ISRCTN48751230]. BMC Health Serv Res. 2003; 3(1): 5.

http://www.pubmedcentral.gov/articlerender.fcgi?tool=pmcentrez&artid=152643
http://www.pubmedcentral.gov/picrender.fcgi?artid=152643&action=stream&blobtype=pdf (pdf file)

Department of Health Services Research, Norwegian Directorate for Health and Social Affairs, N-0031 Oslo, Norway

ABSTRACT

Background: The underlying reasons for differences between clinical practice and systematically developed guidelines vary from one clinical problem to another. It is therefore logical to tailor strategies to support

the implementation of guidelines to address identified barriers to change. The objective of this trial is to evaluate the effects of a tailored intervention to support the implementation of systematically developed guidelines for the use of antihypertensive and cholesterol-lowering drugs for the primary prevention of cardiovascular disease.

Methods/Design: Unblinded, cluster-randomized trial. 150 general practices will be recruited from two geographical areas in Norway, and randomized to the intervention or control group (passive dissemination of guidelines). Outcomes will be measured for all eligible patients seen in the participating practices during one year after the intervention. A multifaceted intervention has been tailored to address identified barriers to change. Key components are an educational outreach visit with audit and feedback, and computerized reminders. Pharmacists will conduct the visits. During the outreach visit the main recommendations will be presented and software will be installed that links to the electronic medical record systems used in the participating practices. The software will perform an audit that will be fed back during the visit, present pop-up reminders for patients with high blood pressure or cholesterol, and provide a cardiovascular risk calculator and patient education material.

Outcomes: The main outcomes are the proportions of 1) first time prescriptions for hypertension where thiazides are not prescribed, 2) patients not assessed for cardiovascular risk before prescribing antihypertensive or cholesterol-lowering drugs, and 3) patients treated for hypertension or high cholesterol for three months or more who have not achieved recommended treatment goals.

LESS PLATELET RESPONSIVENESS TO ASPIRIN

Reading 9

Friend M, Vucenik I, Miller M. Platelet responsiveness to aspirin in patients with hyperlipidemia. BMJ. 2003 January 11; 326 (7380): 82–83.

http://www.pubmedcentral.gov/articlerender.fcgi?tool=pmcentrez&artid=139938
http://bmj.bmjjournals.com/cgi/reprint/326/7380/82 (pdf file)

Department of Medical and Research Technology and Medicine, University of Maryland Medical Center, Baltimore, MD 21201, USA
Correspondence to: M Miller mmiller@heart.umaryland.edu

SUMMARY

The platelet aggregation in patients in the top and bottom quarters of total cholesterol concentrations is compared. Patients with total cholesterol concentrations < 4.14 mmol/l (bottom quarter) produced less platelet aggregation and thus had better platelet responsiveness to aspirin, than patients in the upper quarter of cholesterol concentrations (7% v 64%; P=0.004 by χ^2analysis). Patients who respond poorly to aspirin may need higher doses of aspirin, alternative antiplatelet agents (such as clopidogrel), or further reductions in concentrations of total cholesterol and LDL cholesterol.

HERBS FOR HYPERCHOLESTEROLMIA

Reading 10

Thompson Coon JS, and Edzard Ernst E. Herbs for serum cholesterol reduction: A systematic review. J Fam Pract. 2003 Jun;52(6):468-78.

http://www.jfponline.com/content/2003/06/jfp_0603_00468.asp

Peninsula Medical School, Universities of Exeter and Plymouth, Exeter, United Kingdom

ABSTRACT

Objectives: To systematically review the clinical evidence for herbal medicinal products in the treatment of hypercholesterolemia.

Study Design: A systematic review of randomized clinical trials of herbal medicinal products used to lower serum cholesterol. Systematic literature searches were conducted in 6 electronic data-bases. The reference lists of all papers and our files were searched for more relevant publications. Experts in the field and manufacturers of identified herbal medicinal products were contacted for published and unpublished data. No language restrictions were imposed.

Outcomes Measured: All randomized clinical trials of serum cholesterol reduction, in which mono-preparations of herbal medicinal products were administered as supplements to human subjects, were included.

Results: Twenty-five randomized clinical trials involving 11 herbal medicinal products were identified. Guggul (Commiphora mukul), fenugreek (Trigonella foenum-graecum), red yeast rice, and artichoke (Cynara scolymus) have been most extensively studied and have demonstrated reductions in total serum cholesterol levels of between10% and 33%. The methodological quality as assessed by the Jadad score was less than 3 (maximum, 5) for 13 of the 25 trials.

Conclusions: Many herbal medicinal products have potential hypocholesterolemic activity and encouraging safety profiles. However, only a limited amount of clinical research exists to support their efficacy. Further research is warranted to establish the value of these extracts in the treatment of hypercholesterolemia.