GP Research Review

Making Education Easy

Issue 15 – 2009

In this issue:

Welcome to the fifteenth edition of GP Research Review.

This month's articles touch on depression in the elderly – an important problem as our population gets older – as well as a couple of interesting articles that show that genetic disease propensities can be mitigated. There's also the usual collection of items that reflect the bread and butter world of general practice, where we never know what's coming through the door next. I hope you enjoy this month's selection.

Kind regards,

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Outcome of depression in later life in primary care: longitudinal cohort study with three years' follow-up

Authors: Licht-Strunk E et al

Summary: The duration of depression, recovery over time, and predictors of prognosis are reported for a cohort of 234 older people (≥55 years) with a prevalent major depressive disorder who were attending 32 general practices in The Netherlands. Patients were followed-up for 3 years. The median duration of a major depressive episode was 18.0 months. Thirty-five percent of depressed patients recovered within one year, 60% within two years, and 68% within three years. A poor outcome was associated with severity of depression at baseline, a family history of depression, and poorer physical functioning. During follow-up functional status remained limited in patients with chronic depression but not in those who had recovered.

Comment: We often hear about depression in younger people, but it has been long known that the prevalence of depression increases with age. This is a largely hidden problem in the community, but is becoming an increasingly important public health problem with the ageing population, as this study clearly demonstrates. Also, chronic disease can complicate the picture of depression, another important factor to keep in mind in relation to older people.

Reference: BMJ. 2009;338:a3079.
http://www.bmj.com/cgi/content/abstract/338/feb02_1/a3079

Low doses of controlled-release paroxetine in the treatment of late-life depression: A randomized, placebo-controlled trial

Authors: Rapaport MH et al

Summary: A total of 525 patients aged ≥60 years with major depressive disorder were assigned to controlled-release (CR) paroxetine 12.5 mg (n=168), paroxetine CR 25 mg (n=177), or placebo (n=180), for 10 weeks. The change from baseline in the 17-item Hamilton Rating Scale for Depression (HAM-D) scores at study endpoint was significantly different between the placebo and paroxetine CR 12.5 mg groups (–1.8; p=0.029), and between the placebo and paroxetine CR 25 mg groups (–3.3; p<0.001). A significantly larger percentage of patients achieved full remission (HAM-D total score ≤7 at endpoint) with paroxetine CR 25 mg (41%), but not with 12.5 mg (31%), compared with placebo (28%) (p=0.008). Both doses of paroxetine CR also achieved statistical significance compared to placebo on the Clinical Global Impressions-Severity of Illness scale (p<0.01), the patient-rated measures of depression severity (p<0.05) and quality of life (p≥0.001). Both active treatments were generally well tolerated, with adverse event withdrawal rates of 6%, 8%, and 7% for paroxetine CR 12.5 mg, paroxetine CR 25 mg, and placebo, respectively.

Comment: As depression in the elderly is increasing, and the pharmacology of drugs is quite different in the elderly, these studies are important. Traditionally, many trials have had an upper age limit, and we should ask ourselves, "do these results generalise to older age groups?" Such studies are important in an ageing population.

Reference: J Clin Psychiatry. 2009;70(1):46-57.
http://tinyurl.com/de2se7

Efficacy of statins in familial hypercholesterolaemia: a long term cohort study

Authors: Versmissen J et al

Summary: These researchers investigated the effect of statins on the risk of incident coronary heart disease in a cohort of patients with familial hypercholesterolaemia without prevalent coronary heart disease recruited from 27 lipid clinics before 1 January 1990. In January 1990, 413 patients had started statin treatment, and a further 1294 patients were prescribed statins during the mean 8.5-year follow-up period. After adjusting for year of birth and sex, statin recipients had a 76% reduction in risk of coronary heart disease compared with untreated patients (p<0.001). The risk of myocardial infarction was also compared for patients aged >55 years (n=261) with 1975 people in an age-matched subgroup of the Rotterdam study participants. The absolute risk of myocardial infarction was 6.7/1000 person years in the statin recipients and 60.5/1000 person-years in the untreated patients from this study, and 4.1/1000 person-years in the sample from the Rotterdam study. After adjusting for year of birth and sex, the risk of myocardial infarction in the statin recipients was not significantly greater than that in the Rotterdam study sample (HR 1.44; p=0.23), whereas the untreated patients had an 8.7-fold greater risk (HR 8.69; p<0.001).

Comment: Although you can't change your family history, it appears that you can do something about it! This is good news for these patients where the blood lipids can be troublesome to treat sometimes.

Reference: BMJ. 2008;337:a2423.
http://tinyurl.com/cgyaqh

Physical activity reduces the influence of genetic effects on BMI and waist circumference: a study in young adult twins

Authors: Mustelin L et al

Summary: Gene-environment interaction models were used to analyse the modifying effect of physical activity on genetic and environmental influences, using data on height, weight, waist circumference and physical activity of 4343 subjects at the average age of 25 years from the FinnTwin16 Study, a population-based, longitudinal study of five consecutive birth cohorts (1975–1979) of Finnish twins. The overall heritability estimates were 79% in males and 78% in females for body mass index (BMI), 56% and 71% for waist circumference and 55% and 54% for physical activity, respectively. An inverse relationship was observed between physical activity and waist circumference in males (r = –0.12) and females (r = –0.18), and between physical activity and BMI in females (r = –0.12). Physical activity significantly modified the heritability of BMI and waist circumference, with a high level of physical activity reducing the influence of genetic factors for developing high BMI and waist circumference.

Comment: Like the previous study, it appears that it's not "all in the genes" – it's how they interact with the environment. This is comforting news for patients with genetic susceptibilities: you can actually do something about the effects of your family history!

Reference: Int J Obes (Lond). 2009;33(1):29-36.
http://www.nature.com/ijo/journal/v33/n1/abs/ijo2008258a.html

Mechanical supports for acute, severe ankle sprain: a pragmatic, multicentre, randomised controlled trial

Authors: Lamb SE et al

Summary: This clinical trial involved 584 patients treated in 8 emergency departments for severe ankle sprain, who were assigned to tubular compression bandage (reference), Bledsoe boot, 10-day below-knee cast, or Aircast, within 3 days of their injury. Trained healthcare professionals provided advice about use of the supports and strategies to reduce swelling and pain. Foot and Ankle Scores for the below-knee cast and Aircast revealed an 8% to 9% improvement in the quality of ankle function at 3 months compared with the compression bandage. The degree of improvement with the Bledsoe boot did not differ significantly from that of the tubular compression bandage, which was the least effective device. The quality of recovery at nine months did not differ among the four devices.

Comment: The treatment of ankle ligamentous injuries depends upon the grade of the injury, and I wonder how often this is determined exactly. I'll be interested to hear discussion around this approach to managing this very common injury, as this may be a better option to prevent long-term morbidity.

Reference: Lancet. 2009;373(9663):575-81.
http://tinyurl.com/bdjmsl

Safely ruling out deep venous thrombosis in primary care

Authors: Büller HR et al

Summary: This study examined the safety and efficacy of a clinical decision rule, including a point-of-care D-dimer assay, to exclude deep venous thrombosis (DVT) at initial presentation in primary care. 1028 consecutive patients with clinically suspected DVT were managed using this clinical decision rule at about 300 primary care practices in The Netherlands. Patients with a score of ≤3 were not referred for ultrasonography or treated with anticoagulants, whereas those with a score of ≥4 were referred for ultrasonography. 1002 patients (98%) had a valid score on the clinical decision rule. Of 500 patients (49%) with a score of ≤3, 7 developed venous thromboembolism within 3 months (incidence, 1.4%). Of 502 patients (49%) with a score of ≥4, 3 did not have ultrasonography, and 125 (25%) had evidence of DVT on ultrasonography. Among evaluable patients, overall prevalence of DVT was 13% (125/1002). Of 374 patients with normal ultrasonography when first evaluated, 4 developed venous thromboembolism within 3 months (1.1%).

Comment: We've talked about this before, but hopefully this information becomes incorporated into treatment guidelines to avoid putting patients through unnecessary investigations.

Reference: Ann Intern Med. 2009;150(4):229-35.
http://www.annals.org/cgi/content/abstract/150/4/229

Independent commentary by Dr Ronald McCoy, GP and educator in online GP medical education.

Research Review publications are intended for Australian health professionals.

Dairy food, calcium, and risk of cancer in the NIH-AARP Diet and Health Study

Authors: Park Y et al

Summary: In the National Institutes of Health (NIH)-AARP (formerly known as the American Association of Retired Persons) Diet and Health Study, food frequency questionnaires were administered to approximately 500,000 participants, to examine dairy food and calcium intakes from foods and supplements in relation to total cancer as well as cancer at individual sites. During a mean 7-year follow-up, 36,965 cancer cases were identified in men and 16,605 in women. Calcium intake did not relate to total cancer in men but was nonlinearly associated with total cancer in women: the risk decreased up to approximately 1300 mg/day, above which no further risk reduction was observed. In both men and women, dairy food and calcium intakes were inversely associated with cancers of the digestive system (multivariate relative risk for total calcium consumption of ≥1800 mg/day vs consumption of <500 mg/day, 0.84 in men, and 0.77 in women). Decreased risk was particularly pronounced with colorectal cancer.

Comment: Very interesting! Poor dairy food gets such a knocking by the public but is such an important, easy and cheap food source, with many health benefits, especially in an ageing population in need of preserving total body calcium. Hopefully this study might help a little.

Reference: Arch Intern Med. 2009;169(4):391-401.
http://archinte.ama-assn.org/cgi/content/abstract/169/4/391

Comparison of the Framingham and United Kingdom Prospective Diabetes Study cardiovascular risk equations in Australian patients with type 2 diabetes from the Fremantle Diabetes Study

Authors: Davis WA et al

Summary: The performance of the Framingham and United Kingdom Prospective Diabetes Study (UKPDS) cardiovascular risk equations were assessed in Australian patients with type 2 diabetes who were initially free of cardiovascular disease (CVD), using data for the period 1993–2006 from the Fremantle Diabetes Study. Of the 815 FDS participants with type 2 diabetes who were initially CVD-free, 791 (97%) were eligible for assessment using the UKPDS equations, and 697 (86%) using the Framingham equation. During follow-up to first CVD event, death or 5 years, 38 myocardial infarctions (11 fatal) and 23 strokes (13 fatal) occurred in the UKPDS-assessable cohort. The UKPDS risk equations for all CHD, fatal CHD, and all stroke overestimated the number of events by 6.5, 2.8 and 1.8 times, respectively. The risk equation for fatal stroke underestimated the number of events by 38%. The UKPDS CHD risk equations showed modest discrimination and poor calibration, while the stroke risk equations showed good discrimination and calibration. The Framingham equation predicted 28% fewer CHD events than occurred (93 vs 130), and discrimination and calibration were poor.

Comment: An interesting study. We always have to ask "are the results of this study generalisable to that population?" This one says no, and reinforces the importance of promoting a healthy culture of research for our own patient populations, especially for an important disease such as cardiovascular disease.

Reference: Med J Aust. 2009;190(4):180-4.
http://tinyurl.com/c66f25

Proton-pump inhibitors and the risk of antibiotic use and hospitalisation for pneumonia

Authors: Roughead EE et al

Summary: Data were retrospectively analysed from 185,533 veterans who were Gold Card holders (i.e., eligible for all health services subsidised by the Australian Department of Veterans' Affairs) and aged ≥65 years at 1 January 2002 and who had been prescribed at least one medicine in the previous 6 months during the study period of 1 January 2002 and 30 December 2006, to determine whether proton-pump inhibitor (PPI) use is associated with hospitalisations for pneumonia and with antibiotic use. After adjusting for potential confounders, an increased risk of hospitalisation for pneumonia was observed among those exposed to PPIs compared with the unexposed group (rate ratio [RR], 1.16). The risk was not increased for bacterial pneumonia (RR, 1.13), totalling 8% of pneumonia cases. An increased risk of antibiotic dispensings for respiratory infections was observed among those exposed to PPIs (RR, 1.23).

Comment: Interesting. We often don't see adverse effects of medications until some time down the track, and hence the importance of everybody taking part in the ongoing monitoring of drug adverse effects.

Reference: Med J Aust. 2009;190(3):114-6.
http://tinyurl.com/c6j7ao

Telephone counseling for physical activity and diet in primary care patients

Authors: Eakin E et al

Summary: In this study, 434 adult patients with type 2 diabetes or hypertension from a disadvantaged community were recruited from 10 primary care practices and randomised to 12 months of telephone counselling intervention or usual care, addressing physical activity and dietary intake. At 12 months, patients in both groups increased moderate-to-vigorous physical activity by a mean of 78 minutes per week. Significant intervention effects (telephone counselling minus usual care) were observed for: calories from total fat (decrease of 1.17%; $p<0.007$), energy from saturated fat (decrease of 0.97%; $p<0.007$), vegetable intake (increase of 0.71 servings; $p<0.039$), fruit intake (increase of 0.30 servings; $p<0.001$), and grams of fibre (increase of 2.23 g; $p<0.001$).

Comment: I love these studies that look at innovative programmes to promote healthy lifestyles. There are a lot of studies now – many of which we have featured here – that use phone, SMS, email and internet – to increase exercise and change other unhealthy behaviours. There is great potential in this area and hopefully we will see some new programmes over the next few years to help this major challenge to the health of the public.

Reference: Am J Prev Med. 2009;36(2):142-9.
http://linkinghub.elsevier.com/retrieve/pii/S0749379708008970