ABSTRACT FROM CURRENT LITERATURE

Fruit consumption and risk of type 2 diabetes: results from three prospective longitudinal cohort studies

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BMJ 2013; 347 : f5001

Objective: To determine whether individual fruits are differentially associated with risk of type 2 diabetes.

Design: Prospective longitudinal cohort study.

Setting: Health professionals in the United States.

Participants: 66105 women from the Nurses' Health Study (1984-2008), 85104 women from the Nurses' Health Study II (1991-2009), and 36173 men from the Health Professionals Follow-up Study (1986-2008) who were free of major chronic diseases at baseline in these studies.

Main outcome measure: Incident cases of type 2 diabetes, identified through self report and confirmed by supplementary questionnaires.

Results: During 3464641 person years of follow-up, 12198 participants developed type 2 diabetes. After adjustment for personal, lifestyle, and dietary risk factors of diabetes, the pooled hazard ratio of type 2 diabetes for every three servings/week of total whole fruit consumption was 0.98 (95% confidence interval 0.96 to 0.99). With mutual adjustment of individual fruits, the pooled hazard ratios of type 2 diabetes for every three servings/week were 0.74 (0.66 to 0.83) for blueberries, 0.88 (0.83 to 0.93) for grapes and raisins, 0.89 (0.79 to 1.01) for prunes, 0.93 (0.90 to 0.96) for apples and pears, 0.95 (0.91 to 0.98) for bananas, 0.95 (0.91 to 0.99) for grapefruit, 0.97 (0.92 to 1.02) for peaches, plums, and apricots, 0.99 (0.95 to 1.03) for oranges, 1.03 (0.96 to 1.10) for strawberries, and 1.10 (1.02 to 1.18) for cantaloupe. The pooled hazard ratio for the same increment in fruit juice consumption was 1.08 (1.05 to 1.11). The associations with risk of type 2 diabetes differed significantly among individual fruits ($P<0.001$ in all cohorts).

Conclusion: Our findings suggest the presence of heterogeneity in the associations between individual fruit consumption and risk of type 2 diabetes. Greater consumption of specific whole fruits, particularly blueberries, grapes, and apples, is significantly associated with a lower risk of type 2 diabetes, whereas greater consumption of fruit juice is associated with a higher risk.

Comparative effectiveness of exercise and drug interventions on mortality outcomes: metaepidemiological study

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BMJ 2013; 347 : f5577

Objective: To determine the comparative effectiveness of exercise versus drug interventions on mortality outcomes.

Design: Metaepidemiological study.

Eligibility criteria: Meta-analyses of randomised controlled trials with mortality outcomes comparing the effectiveness of exercise and drug interventions with each other or with control (placebo or usual care).

Data sources: Medline and Cochrane Database of Systematic Reviews, May 2013.

Main outcome measure: Mortality.

Data synthesis: We combined study level death outcomes from exercise and drug trials using random effects network meta-analysis.

Results: We included 16 (four exercise and 12 drug) meta-analyses. Incorporating an additional three recent exercise trials, our review collectively included 305 randomised controlled trials with 339274 participants. Across all four conditions with evidence on the effectiveness of exercise on mortality outcomes (secondary prevention of coronary heart disease, rehabilitation of stroke, treatment of heart failure, prevention of diabetes), 14716 participants were randomised to physical activity interventions in 57 trials. No statistically detectable differences were evident between exercise and drug interventions in the secondary prevention of coronary heart disease and prediabetes. Physical activity interventions were more effective than drug treatment among patients with stroke (odds ratios, exercise v anticoagulants 0.09, 95% credible intervals 0.01 to 0.70 and exercise vantiplatelets 0.10, 0.01 to 0.62). Diuretics were more effective than exercise in heart failure (exercise v diuretics 4.11, 1.17 to 24.76). Inconsistency between direct and indirect comparisons was not significant.

Conclusions: Although limited in quantity, existing randomised trial evidence on exercise interventions suggests that exercise and many drug interventions are often potentially similar in terms of their mortality benefits in the secondary prevention of coronary heart disease, rehabilitation after stroke, treatment of heart failure, and prevention of diabetes.

Clopidogrel with Aspirin in Acute Minor Stroke or Transient Ischemic Attack

Wang Y, Wang Y, Zhao X et al

N Engl J Med 2013; 369 : 11-19

Background: Stroke is common during the first few weeks after a transient ischemic attack (TIA) or minor ischemic stroke. Combination therapy with clopidogrel and aspirin may provide greater protection against subsequent stroke than aspirin alone.

Methods: In a randomized, double-blind, placebo-controlled trial conducted at 114 centers in China, we randomly assigned 5170 patients within 24 hours after the onset of minor ischemic stroke or high-risk TIA to combination therapy with clopidogrel and aspirin (clopidogrel at an initial dose of 300 mg, followed by 75 mg per day for 90 days, plus aspirin at a dose of 75 mg per day for the first 21 days) or to placebo plus aspirin (75 mg per day for 90 days). All participants received open-label aspirin at a clinician-determined dose of 75 to 300 mg on day 1. The primary outcome was stroke (ischemic or hemorrhagic) during 90 days of follow-up in an intention-to-treat analysis. Treatment differences were assessed with the use of a Cox proportional-hazards model, with study center as a random effect.

Results: Stroke occurred in 8.2% of patients in the clopidogrel-aspirin group, as compared with 11.7% of those in the aspirin group (hazard ratio, 0.68; 95% confidence interval, 0.57 to 0.81; P<0.001). Moderate or severe hemorrhage occurred in seven patients (0.3%) in the clopidogrel-aspirin group and in eight (0.3%) in the aspirin group (P=0.73); the rate of hemorrhagic stroke was 0.3% in each group.

Conclusions: Among patients with TIA or minor stroke who can be treated within 24 hours after the onset of symptoms, the combination of clopidogrel and aspirin is superior to aspirin alone for reducing the risk of stroke in the first 90 days and does not increase the risk of hemorrhage.

A Randomized Trial of Colchicine for Acute Pericarditis

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N Engl J Med 2013; 369 : 1522-6

Background: Colchicine is effective for the treatment of recurrent pericarditis. However, conclusive data are lacking regarding the use of colchicine during a first attack of acute pericarditis and in the prevention of recurrent symptoms.

Methods: In a multicenter, double-blind trial, eligible adults with acute pericarditis were randomly assigned to receive either colchicine (at a dose of 0.5 mg twice daily for 3 months for patients weighing >70 kg or 0.5 mg once daily for patients weighing <70 kg) or placebo in addition to conventional antiinflammatory therapy with aspirin or ibuprofen. The primary study outcome was incessant or recurrent pericarditis.

Results: A total of 240 patients were enrolled, and 120 were randomly assigned to each of the two study groups. The primary outcome occurred in 20 patients (16.7%) in the colchicine group and 45 patients (37.5%) in the placebo group (relative risk reduction in the colchicine group, 0.56; 95% confidence interval, 0.30 to 0.72; number needed to treat, 4; P<0.001). Colchicine reduced the rate of symptom persistence at 72 hours (19.2% vs. 40.0%, P=0.001), the number of recurrences per patient (0.21 vs. 0.52, P=0.001), and the hospitalization rate (5.0% vs. 14.2%, P=0.02). Colchicine also improved the remission rate at 1 week (85.0% vs. 58.3%, P<0.001). Overall adverse effects and rates of study-drug discontinuation were similar in the two study groups. No serious adverse events were observed.

Conclusions: In patients with acute pericarditis, colchicine, when added to conventional anti-inflammatory therapy, significantly reduced the rate of incessant or recurrent pericarditis.

Management of reflex anoxic seizures in children

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Arch Dis Child 2013; 98 : 714-717

Reflex anoxic seizures (RAS) are important in the differentia! diagnosis of non-epileptic paroxysmal events in infants and preschool-aged children. They are classically provoked by a sudden distressing stimulus, which causes loss of consciousness followed by stiffening and brief clonic movements affecting some or all limbs, often misinterpreted as an epileptic seizure. The underlying pathophysiology is a vagal-induced brief cardiac asystole with resultant transient cerebral hypoperfusion. Parents and carers who witness the event are understandably anxious, and the mainstay of management are ensuring the appropriate timely diagnosis of RAS and excluding cardiac arrhythmia. A detailed history from a witness is all that is needed to diagnose this condition and investigations like EEG or neuroimaging should be avoided. Education and reassurance remain the mainstay in the management. Some children benefit from medical treatment with atropine or fluoxetine; however, there is a lack of evidence for pharmacological treatment. Cardiac pacing is the only definitive treatment, and is reserved for frequent, severe cases in joint consultation with the cardiologist.

Spontaneous Intracranial Hypotension in Childhood and Adolescence

Schievink WI, Maya MM, Louy CL et al

J Pediatr 2013; 163: 504-10

Objectives: To describe the clinical and radiographic manifestations of spontaneous intracranial hypotension, a rarely diagnosed cause of headache in children.

Study design: This study included patients 19 years of age or younger evaluated between January 1, 2001, and June 30, 2012, for spontaneous intracranial hypotension.

Results: We evaluated 24 children (18 girls and 6 boys) with spontaneous intracranial hypotension (age at onset of symptoms: 2-19 years, mean 14.3 years). Twenty-three patients presented with orthostatic headaches and 1 presented with a nonpositional headache. A generalized connective tissue disorder was diagnosed in 54% of patients. Magnetic resonance imaging showed the typical changes of spontaneous intracranial hypotension in most patients (79%). Spinal imaging demonstrated a cerebrospinal fluid (CSF) leak with or without an associated meningeal diverticulum in 12 patients (50%) and with dural ectasia or meningeal diverticula in 10 patients (42%), and it was normal in 2 patients (8%). Twenty-three patients initially underwent epidural blood patching, but 8 patients also were treated with percutaneous injections of fibrin glue and 11 patients eventually required surgical correction of the underlying CSF leak. There was no morbidity or mortality associated with any of the treatments, but 5 patients required acetazolamide for rebound high intracranial pressure headache. Overall, outcome was good in 22 patients (92%) and poor in 2 patients (8%).

Conclusions: Spontaneous intracranial hypotension in childhood is rare. Most patients can be treated effectively using a combination of epidural blood patching and percutaneous injections of fibrin glue or surgical CSF leak repair in refractory cases.

Catheter-directed thrombolysis for iliofemoral deep vein thrombosis

Saunders JH, Arya PH, Abisi S et al

British Journal of Surgery 2013; 100: 1025-1029

Background: Recent international guidance recommends the use of catheter-directed thrombolysis (CDT) in selected patients with symptomatic iliofemoral deep vein thrombosis (DVT). The aim of this study was to estimate the potential increase in workload as a result of this recommendation.

Methods: Using the radiology database, a review was performed of all DVTs diagnosed between August 2010 and February 2012 at a large tertiary referral hospital. The National Institute for Health and Clinical Excellence and American College of Chest Physicians guidance was applied retrospectively to this cohort, using case-note review by two independent clinicians to determine which patients would have been suitable for CDT.

Results: Some 563 patients had DVT confirmed radiologically over the 18-month interval. Fifty-three of the 128 patients with iliofemoral DVT would have been eligible for intervention with CDT, equivalent to 4-4 patients per 100 000 per year. Only eight (IS per cent) of the 53 were actually referred to vascular services for treatment. All eight patients had successful CDT, which involved a stay in critical care for monitoring (median 2 (range 1-3) sessions).

Conclusion: Vascular units should be prepared for a major increase in the requirement for CDT for iliofemoral DVT. This increase will affect inpatient beds, the interventional radiology suite, critical care and interhospital referrals.

Prospective study of pain, quality of life and the economic impact of open inguinal hernia repair

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British Journal of Surgery 2013; 100 : 1483-88

Background: There are variations in quality of life (QoL) and reported risk of chronic pain after inguinal hernia repair. The aim of this study was to investigate the improvement in pain and QoL after open inguinal hernia repair, and the economic impact.

Methods: Patients undergoing open mesh repair of a primary unilateral inguinal hernia were stratified depending on preoperative levels of symptoms and pain. Short Form 36 (SF-36®) and EQ-5D™ questionnaires were filled in before, and at 3 and 12 months after surgery. EQ-5D™ data, together with information on the mean value of a quality-adjusted life-year and the societal cost of hernia repair, were used to calculate the monetary value of QoL. gained and the mean return on investment.

Results: Of 225 patients who began the study, 184 completed follow-up at 12 months. Some 77.2 per cent reported improvement in pain and 54 per cent reported increased pain after surgery. Significant improvement in SF-36® scores, pain scores measured on a visual analogue scale (VAS), and symptoms were found in the majority of patients, even those with mild symptoms before surgery. For the whole group, the bodily pain score increased from 56-4 before surgery to 82 6

at 12 months after hernia repair (P < 0 050). and the VAS score decreased from a median of 4 to 0 (P < 0-050). The return on investment was positive for all groups of patients, including those with mild symptoms.

Conclusion: QoL improves after open inguinal hernia repair, with a good return on investment independent of symptom severity.

Salivary progesterone as a biochemical marker to predict early preterm birth in asymptomatic high-risk women

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BJOG: 2013; 120 : 1003-11

Objective: To evaluate salivary progesterone as a predictor of early preterm birth (PTB) and compare it with transvaginal sonographic (TVS) cervical length in asymptomatic high-risk women.

Design: Prospective study.

Setting: Departments of Obstetrics and Gynaecology and Biochemistry at UCMS & GTBH, Delhi, India.

Sample: Ninety pregnant women.

Methods: The progesterone concentration in saliva of asymptomatic pregnant women at high risk for preterm delivery was estimated by immunoassay, and cervical length was measured by TVS, at the first antenatal visit at 24-28 weeks of gestation, and then repeated 3-4 weeks later.

Main outcome measures: Early PTB, mean and critical cut-off values of salivary progesterone, and a diagnostic value comparison of salivary progesterone with TVS cervical length.

Results: The mean value of salivary progesterone was significantly lower in all women who delivered at <37 weeks of gestation (n = 38), compared with the term group (n = 52; P < 0.001). Salivary progesterone decreased significantly from the first to the second visit, with the maximum decrease observed in women who delivered at <34 weeks of gestation (29.6%, 95% CI 17.8- 41.4%, P < 0.002). The single predictive critical cut-off value for salivary progesterone was 2575 pg/ml, below which more than 80% of women delivered prematurely before 34 weeks of gestation, with sensitivity, specificity, and positive and negative predictive values of 83% (95% CI 58.6-96.4%), 86% (95% CI 75.9-93.1%), 60% (95% CI 38.6-78.8%) and 95% (95% CI 87.1-99.0%), respectively. The TVS cervical length decreased significantly (P < 0.001) in the women who delivered prematurely.

Conclusions: Low salivary progesterone concentration can be used for predicting early PTB in asymptomatic high-risk women.

Pre-eclampsia is associated with, and preceded by, hypertriglyceridaemia: a meta-analysis

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BJOG : 2013; 120 : 1321-32

Background: Elevated triglycerides are a feature of the metabolic syndrome, maternal obesity, maternal vasculitis (i.e. systemic lupus erythematosus) and diabetes mellitus. These conditions are all known risk factors for pre-eclampsia. Hypertriglyceridaemia therefore may be associated with pre-eclampsia and indeed this may precede the presence of overt disease.

Objective: In this study we determine the association between hypertriglyceridaemia and pre-eclampsia in pregnant women.

Search strategy: We searched MEDLINE, EMBASE, Web of Science, Excerpta Medica Database, ISI Web of Knowledge, Cumulative Index to Nursing and Allied Health Literature, Cochrane Library from inception until June 2012 and reference lists of relevant studies.

Selection criteria: Two reviewers independently selected studies on pregnant women where triglycerides were measured and women were followed up until the development of pre-eclampsia or selected on the basis of presence of pre-eclampsia and compared with controls.

Data collection and analysis: We collected and meta-analysed the weighted mean differences (WMDs) of triglyceride levels from individual studies using a random effects model.

Main results: We found strong evidence from meta-analysis of 24 case-control studies (2720 women) that pre-eclampsia is associated with higher levels of serum triglycerides (WMD 0.78 mmol/l, 95% confidence interval 0.6-0.96, P < 0.00001). This finding is also confirmed in five cohort studies, that recruited 3147 women in the second trimester before the onset of pre-eclampsia, which proves that hypertriglyceridaemia precedes the onset of pre-eclampsia (WMD 0.24 mmol/l, 95% confidence interval 0.13-0.34, P < 0.0001).

Author's conclusions: Hypertriglyceridaemia is associated with and precedes the onset of pre-eclampsia. Further research should focus on defining the prognostic accuracy of this test to identify women at risk and the beneficial effect of triglyceride-lowering therapies in pregnancy.