

Masala

New drug for multidrug-resistant (MDR) tuberculosis (TB)

The WHO has recently approved the use of a new agent, bedaquiline, for treating MDR-TB. Based on data from a phase 2b trial, the US Food and Drug Administration (FDA) granted fast track approval to bedaquiline in December 2012. This trial randomized 160 adult patients with newly diagnosed sputum-positive MDR-TB to receive either bedaquiline or placebo in addition to a 5-drug background regimen (BR). Bedaquiline was given for 24 weeks followed by 72 weeks of treatment with the BR. The median time to sputum culture conversion was 83 days in the bedaquiline group versus 125 days in the placebo group. The percentage of responders at week 72 was 71.2% in the bedaquiline group versus 56.1% in the placebo group ($p=0.069$). The proportion of patients defined as cured at 120 weeks was 57.6% in the bedaquiline arm versus 31.8% in the placebo arm ($p=0.003$) (*N Engl J Med* 2009; **360**:2397–405). With bedaquiline being the first new agent for the treatment of TB in the past 40 years, these results are encouraging (available from http://apps.who.int/iris/bitstream/10665/84879/1/9789241505482_eng.pdf, accessed on 12 Jun 2013).

Blood pressure in diabetes: Lower may not be better

Researchers from Louisiana State University, USA did a prospective cohort study on patients with diabetes including 17 536 African American and 12 618 white patients. During a mean follow-up of 6 years, 7260 incident cases of coronary heart disease (CHD) were identified. Multivariable-adjusted hazard ratios were calculated for incident CHD associated with different levels of systolic/diastolic blood pressure at baseline. A U-shaped association was found. The highest risk of CHD was seen in those with a baseline blood pressure of <110/65 mmHg or 110–119/65–69 mmHg. The American Diabetes Association has recently revised the target for systolic blood pressure control in patients with diabetes from <130 mmHg to <140 mmHg (*Diabetes Care* 2013; **36** Suppl 1:S11–S66). Prudence is required while lowering blood pressure in patients with diabetes (*Diabetes Care* 2013 June 11. doi: 10.2337/dc13-0189).

Counting calories: Not so easy

In a cross-sectional study from New England, USA, researchers interviewed those eating at 89 fast food restaurants. Participants included 1877 adults, 330 school-age children and 1178 adolescents visiting restaurants in 2010 and 2011. The calorie content of meals was estimated from data on the restaurant's website and this was compared with the individual's estimate of the calorie content. Among adults, adolescents and school-age children, the mean actual calorie content of meals was 836, 756 and 733 calories, respectively. Participants underestimated their calorie intake by a mean of 175, 259 and 175 calories, respectively. These findings make a strong case for requiring restaurants to provide menus indicating the calorie content of food items (*BMJ* 2013; **346**:f2907).

Antibiotics after urinary catheter removal

Antibiotic therapy after removal of short-term (<14 days) urinary catheters might reduce the incidence of urinary tract infections. A systematic review and meta-analysis of seven controlled studies was done. Five of the studies were in surgical patients.

Different antibiotics were used in these studies for variable durations. Overall, antibiotic prophylaxis led to an absolute reduction of 5.8% in the incidence of urinary tract infections from 10.5% in the control group to 4.7% in the antibiotic group. The number needed-to-treat to prevent one urinary tract infection was 17 (*BMJ* 2013; **346**:f3147).

Cell-free DNA testing for foetal aneuploidies

Testing of cell-free foetal DNA (cfDNA) circulating in maternal blood offers a non-invasive method for screening for foetal aneuploidies. In a prospective study, women with a singleton pregnancy were screened for trisomies 21, 18 and 13. cfDNA testing was done at 10 weeks and was compared with the combined test—ultrasound measurement of nuchal transparency combined with estimation of serum levels of β -HCG and pregnancy-associated plasma protein-A (PAPP-A) at 12 weeks. Of 1005 pregnant women with a median age of 37 years, a high risk of specific trisomies was found in 17 cases and in 968 the risk for trisomies was <0.01%. All suspected trisomies were confirmed by karyotyping after chorionic villous sampling (CVS), except one in which the karyotype was normal. All cases of trisomy were detected by both cfDNA and combined testing. However, the false-positive rates for cfDNA were 0.1% and for the combined test 3.4%. The low false-positive rates of cfDNA testing minimize the need for invasive tests (*Ultrasound Obstet Gynecol* 2013; **42**:34–40).

Keep walking

Researchers in the US recruited 10 non-smoking individuals over 60 years of age with fasting blood glucose levels between 105 and 125 mg/dl. Participants had a body mass index of <35 kg/m². They completed three randomly ordered exercise protocols 4 weeks apart. Each protocol involved a 48-hour stay in a whole-room calorimeter, with the first day serving as the control day. On the second day, participants engaged in either post-meal walking on a treadmill for 15 minutes (three times) or 45 minutes of sustained walking once. Interstitial glucose concentrations were determined over 48 hours with a continuous glucose monitor. Both sustained morning walking and post-meal walking significantly improved 24-hour glycaemic control. Post-meal walking was significantly more effective in lowering 3-hour post-dinner glucose. Reason enough to take a short walk after meals (*Diabetes Care* 2013 June 11, doi: 10.2337/dc13-0084).

Get operated on a Monday!

Data were analysed from elective surgeries performed at all acute and specialist English hospitals over a 3-year period. The primary outcome of interest was death in or out of hospital within 30 days of surgery. There were 27 582 deaths within 30 days after 4 133 346 inpatient admissions for elective operating room procedures (overall crude mortality rate 6.7 per 1000). The adjusted odds of death were 44% and 82% higher, respectively, if the procedures were carried out on Fridays or weekends compared to Mondays. Although there were no apparent reasons for this observation, the difference in the staffing patterns during weekdays and over weekends may have accounted for it (*BMJ* 2013; **346**:f24).

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