Abstracts

Benefits of screening for PSA offset by reduced quality of life

After 11 years of follow-up, the European Randomized Study of Screening for Prostate Cancer (ERSPC) reported a 29% reduction in prostate cancer mortality among men who underwent screening for prostate-specific antigen (PSA) levels. However, the extent to which harms to quality of life resulting from over-diagnosis and treatment counterbalance this benefit is uncertain.

On the basis of ERSPC follow-up data, we used Microsimulation Screening Analysis (MISCAN) to predict the number of prostate cancers, treatments, deaths and quality-adjusted life years (QALYs) gained after the introduction of PSA screening. Various screening strategies, efficacies and quality-of-life assumptions were modelled.

It was predicted that, per 1 000 men of all ages followed for their entire lives, annual screening of men between the ages of 55 and 69 years would result in 9 fewer deaths from prostate cancer (28% reduction), 14 fewer men receiving palliative therapy (35% reduction), and a total of 73 life years gained (average 8.4 years per prostate cancer death avoided). The number of QALYs that were gained was 56 (range 21 - 97), a reduction of 23% from unadjusted life years gained. To prevent one prostate cancer death, 98 men would need to be screened and 5 cancers would need to be detected. Screening of all men between the ages of 55 and 74 would result in more life years gained (82) but the same number of QALYs (56).

The benefit of PSA screening was diminished by loss of QALYs owing to post-diagnosis long-term effects. Longer follow-up data from both the ERSPC and quality-of-life analyses are essential before universal recommendations regarding screening can be made.

Heijnsdijk EAM, et al. N Engl J Med 2012;367:595-605.

Inhaled glucocorticoids in childhood and adult height

Temporary reduction in growth velocity has been seen in pre-pubertal children using inhaled glucocorticoids for persistent asthma. However, the resulting decrease in attained height 1 - 4 years after starting this treatment is not thought to decrease attained adult height.

In this study, the authors measured adult height in 943 of 1 041 participants in the Childhood Asthma Management Program. Adult height was determined at a mean of 24.9 years. The participants (5 - 13 years old) were randomly assigned to receive 400 µg of budesonide, 16 mg nedocromil or placebo daily for 4 - 6 years. Differences in adult height were calculated for each active treatment group compared with placebo. Adult height was adjusted for demography, asthma features and height at trial entry.

Mean adult height was 1.2 cm lower (95% confidence interval [CI] −1.9 to −0.5) in the budesonide group than in the placebo group (p=0.001) and was 0.2 cm lower (95% CI −0.9 to 0.5) in the nedocromil group than in the placebo group (p=0.61). A larger daily dose of inhaled glucocorticoid in the first 2 years was associated with a lower adult height (−0.1 cm for each microgram per kilogram of body weight) (p=0.007). The reduction in adult height in the budesonide group compared with the placebo group was similar to that seen after 2 years of treatment (−1.3 cm; 95% CI −1.7 to −0.9). During the first 2 years, decreased growth velocity in the budesonide group occurred primarily in pre-pubertal participants.

It appears that the initial decrease in attained height that was associated with the use of inhaled glucocorticoids in pre-pubertal children persisted as a reduction in height as adults. The decrease, however, was not progressive or cumulative.

Kelly HW, et al. N Engl J Med 2012;367:909-912.

Still no real evidence of the health effects of organic food

Organic farming is free of synthetic compounds, antibiotics, growth hormones and irradiation, but does this affect the nutritional value, safety and health effects of organic foods? A review of available evidence included 17 studies on humans and

223 studies of foods, which looked at fruits and vegetables, grains, meat and poultry, as well as milk and eggs. However, only five studies recruited participants whose diets were exclusively organic.

Three studies, two of which included pregnant women and their children, looked at clinical outcomes. No effect was found of consuming organic versus conventionally grown food on allergic symptoms, such as eczema or wheeze, or symptomatic infection with *Campylobacter*. Children who switched to an organic diet for as little as five days had lower amounts of pesticides in their urine. In adults, however, no differences were seen in biomarkers or nutrient levels in serum, urine, breast milk or semen.

Organically grown foods had more phosphorus and more total phenols than foods grown conventionally, but no other differences were seen in nutrients, including vitamins. Milk and chicken from organic farms had more omega-3 fatty acids, though.

Organic foods had a 30% lower risk of contamination with pesticide residue (95% CI −37% to −23%). Rates of *Escherichia coli* contamination did not differ according to the farming method. Chicken and pork were often contaminated with bacteria, and again this did not vary with the farming method, although bacteria resistant to three or more antibiotics were more common with conventional farming (risk difference 33%; 95% CI 21 - 45%). Finally, some evidence hinted that organic produce is linked with less contamination with a fungal toxin deoxynivalenol.

Smith-Spangler C, et al. Ann Intern Med 2012;157:348-366.

Longer resuscitation pays when heart arrest occurs in hospital

How long should revival efforts continue in patients who experience cardiac arrest in hospital? To answer this question, an observational study looked at the records of 64 339 patients with cardiac arrest in 435 US hospitals. People with pacemakers and those whose arrest occurred in emergency, surgery, procedure, or rehabilitation departments were excluded.

The researchers first looked at how hospitals varied in the duration of resuscitation attempts for people who died. Efforts lasted less than 10 minutes for 15.8% of these patients and up to 30 minutes in 76.6%. The median duration of resuscitation in the quarter of hospitals with the shortest times was 16 minutes (interquartile range 15 - 17), followed by 19 (18 - 20), 22 (21 - 23), and 25 (25 - 28) minutes.

Survivors were most common in the last group. People who were treated for the longest time were 12% more likely to have a pulse restored for at least 20 minutes (95% CI 6 - 18%) and 12% more likely to survive to discharge (2 - 23%) than those treated for the shortest time. Patients without systolic activity or a pulse were least likely to survive to discharge, but they also benefited most from longer revival efforts (adjusted risk ratio for longest versus shortest quarter 1.20, 95% CI 1.05 - 1.36). However, no difference was seen between the groups of hospitals in the proportion of patients who were discharged without major neurological impairments (adjusted risk ratio for longest versus shortest quarter 1.00, 0.95 - 1.06).

Longer revival efforts could be a marker of better care overall, but it might be a good idea to set a minimum length for revival efforts. For now, teams might try to prolong resuscitation efforts by 10 - 15 minutes, suggest the authors.

Goldberg ZD, et al. Lancet 2012. [http://dx.doi.org/10.1016/S0140-6736(12)60862-9]