Short cuts

What's new in the other general journals

Omega 3 fatty acids do not prevent cancer

RISK OF DEVELOPING CANCER FOR HIGHEST V LOWEST INTAKE OF OMEGA 3 FATTY ACIDS

Omega 3 fatty acids are unlikely to prevent cancer, write researchers from the United States. In 38 cohort studies they found 65 estimates of the association between omega 3 intake and 11 types of cancer. Only 10 of the estimates were statistically significant, and six of those suggested an increased not a decreased risk of cancer.

The studies were all prospective and reported the effects of omega 3 intake—often from fish—in 20 cohorts of more than 700 000 people who were

followed up for up to 30 years. More than half the studies were of breast, prostate, or colorectal cancer.

If a literature spanning at least 20 years is essentially negative, where did the original notion come from? Probably the laboratory: omega 3 fatty acids influence angiogenesis, cell proliferation, apoptosis, and the immune system, so a link with cancer is biologically plausible. Experiments on laboratory animals also suggest that these fatty acids can suppress some kinds of tumours, although not much. Finally, epidemiological work has hinted that populations with a diet rich in omega 3 fatty acids have a lower prevalence of cancer.

This early circumstantial evidence was probably wrong, write the authors. Laboratory animals eating a diet spiked with toxic doses of fatty acids are very different from ordinary people eating more or less fish. Despite a thorough and detailed search, they could find no good evidence that omega 3 fatty acids protect humans from cancer.

JAMA 2006;295:403-15

Use your sense of smell

You can tell a lot about a patient from the way he or she smells, writes one US doctor. It's often the most obvious thing about them, particularly when they are confined in a closed room. In his first year as a resident he quickly learnt to identify infected diabetic feet or the whiff of a mucky tracheostomy. The telltale smell of bowel gas allowed him to "advance a patient's diet" without any embarrassing questions, and the reek of cigarette smoke was a signal to watch blood gases carefully and consider cancer in the differential diagnosis. He diagnosed uraemia not with blood tests but with a sniff of fetid breath. Patients smelling of toothpaste and shower gel before 6 30 am were clearly ready to go home.

Nothing, however, prepared him for the overwhelming smell of a man with calciphylaxis. This rare but often fatal complication of renal failure causes cutaneous blood vessels to calcify, and tissues to rot from ischaemia. The smell, he writes, was everywhere. It woke with him in the morning and went to bed with him at night, finally dissipating only after the poor man had died.

N Engl J Med 2006;354:327-9

US hospitals learn from Toyota

People working in hospitals waste a lot of time and effort. Patients wait for doctors, doctors wait for patients, surgeons wait for instruments. Everyone walks miles each day simply doing their job. We could all learn a lot from the car manufacturer Toyota, which has pioneered a way of producing cars that wastes not a single minute of the day or a single foot of storage space. Their products flow off the assembly line without defects because "you have exactly what you need when you need it—and no more and no less—and have that happen every single time," says one impressed chief executive.

That kind of efficiency simply does not happen in hospitals. But it might. An article reports that some healthcare facilities in the US are trying to get organised the Toyota way: measuring processes; identifying wasted time, space, and effort; changing the way things are done; and then measuring processes all over again and again.

One hospital has managed to dispense with waiting rooms in its outpatient department. Others have cut 34 miles a day off the average distance walked by staff and reduced from 400 to 40 metres the distance walked by patients visiting an outpatient clinic. But it all had to start by asking the very basic questions, "What are we doing here, and who are we doing it for?"

Lancet 2006;367:290-1

Histological screening yields usable kidneys from older donors

Throughout the history of renal transplantation, demand for donated kidneys has always outstripped supply. Using kidneys from older donors is one way of closing the gap, and a recent study shows that it can work well if the new

kidney is biopsied before transplantation to ensure it has enough viable nephrons.

Researchers compared three matched cohorts of Italians—62 who received one or two histologically evaluated kidneys from a donor aged >60 years, 124 who received an older kidney that was not histologically verified, and 124 who received a kidney from a donor aged ≤60. Graft failure rates over a median follow-up of two years were 6% (4/62), 23% (29/124), and 6% (7/124) respectively, which suggests, say the authors, that checking older kidneys before transplantation can make all the difference. Overall, older kidneys that were transplanted “blind” were more than three times more likely to fail than older kidneys that were evaluated by biopsy first (hazard ratio 3.68, 95% CI 1.29 to 10.52; $P=0.02$). After evaluation, eight patients received one good kidney and the rest (54) received two more marginal kidneys each.

N Engl J Med 2006;354:343-52

Myocardial damage predicts long term mortality after carbon monoxide poisoning

Between 1994 and 2002, 230 patients with moderate or severe carbon monoxide poisoning were admitted to a single poisons centre in the US Midwest. They were relatively young (mean age 47 years) and relatively fit before their carbon monoxide poisoning. Mortality in hospital was low (12/230, 5%), but eight years later nearly a quarter were dead (54/230, 24%), a death rate three times higher than expected.

Those who had sustained myocardial damage from the poisoning fared worse than the others. Patients admitted to the centre with high serum concentrations of cardiac biomarkers or an abnormal electrocardiogram were twice as likely to die during follow-up as patients without myocardial injury (32/85 (38%) *v* 22/145 (15%); hazard ratio 2.1, 95% CI 1.2 to 3.7).

Although carbon monoxide is the commonest cause of poisoning in the US, the authors say theirs is the first study to look at what happens to patients in the years after the event. This cohort, all of whom were treated with hyperbaric oxygen, did worse than expected, and myocardial damage was common.

JAMA 2006;295:398-402

Aprotinin is associated with renal, cardiac, and cerebral side effects after cardiac surgery

Aprotinin, a serine protease inhibitor used to limit blood loss during cardiac surgery, may not be safe. After a decade of routine use, a team of researchers has found a clear and dose related association between aprotinin and increased risk of renal dysfunction (odds ratio 2.34; 95% CI 1.27 to 4.31), heart attack or heart failure (1.42, 1.09 to 1.86), and cerebrovascular events including stroke (2.15, 1.14 to 4.06). They conclude that guidelines recommending the drug should be redrafted and that, pending further work, cardiac surgeons and anaesthetists would be wise to use the safer (and cheaper) alternatives tranexamic acid or aminocaproic acid.

The data came from a cohort of 4374 patients having coronary artery bypass surgery with cardiopulmonary bypass. So their study is purely observational, although the authors worked hard to allow for the effects of case mix and other factors that might have caused patients who received aprotinin to do worse than patients who didn't. A randomised trial at this late stage would be difficult or even impossible.

The size of this study, the detailed and careful analysis, the dose related harm, and the biological plausibility of the findings (aprotinin is known to have harmful effects on renal physiology, and there are large hints about the possibility of intravascular thrombosis) mean that the results should be taken seriously despite the limitations of the design, write the authors. Their data are entirely independent of the drug's manufacturers. Most of the previously published evidence on safety is not.

N Engl J Med 2006;354:353-65

US legislation had no measurable effect on breast reconstruction surgery

Only a minority of US women who have a mastectomy for breast cancer subsequently have breast reconstruction surgery. Worried that the low uptake was due to medical insurers refusing to pay, the US government passed the Women's Health and Cancer Rights Act in 1999 to force the issue. It has made little difference, according to a database study.

In 1998, before the act, 16% of women having a mastectomy went on to have breast reconstruction surgery within four months. Rates stayed about the same (between 16% and 18%) in the three years after the act. Wide variations in uptake persisted despite the legislation: women in Atlanta, Georgia, were seven times more likely to have a reconstruction (35%) than women in Alaska (5%), for example. Social and ethnic inequalities persisted too: between 2000 and 2002, African-American, Hispanic, and Asian women were all significantly less likely than white women to have a reconstruction.

The public database used in this study covers about a quarter of the US population and, if anything, under-represents poor communities with limited access to specialist surgeons. Overall, it looks as though forcing insurers to pay for breast reconstruction after mastectomy has not had the desired effect—more operations and less inequality.

JAMA 2006;295:387-8

Statins help prevent sepsis

Statins are well established as cholesterol lowering drugs. But they also have antioxidant and anti-inflammatory properties, which could explain why a large study from Canada found a link between treatment with statins and a lower risk of sepsis. In a cohort of 69 168 elderly adults aged >65 years admitted to hospital with an acute cardiovascular event, those treated with statins were 19% less likely to develop sepsis subsequently than those who were not (hazard ratio 0.81, 95% CI 0.72 to 0.91). They were also less likely to die from sepsis (0.75, 0.61 to 0.93).

Researchers used four administrative databases maintained by Ontario to recruit and study the cohort, all of whom were aged >65 and who survived for at least three months after their cardiovascular event. Each patient who received a statin within 90 days of discharge was matched with a similar patient who did not, by means of a technique called propensity matching. The design is not as good as a randomised controlled trial, but the researchers tried hard to mitigate against confounding, and their findings seemed consistent across different patient subgroups, different drug doses, and different drugs. Most patients received atorvastatin (37%), simvastatin (28%), or pravastatin (21%).

A linked editorial describes the results as intriguing because they suggest that statins offer overlapping benefits to people with cardiovascular disease. However, only a third of the patients hospitalised between 1997 and 2002 in Ontario received one.

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