Reversal of hepatitis B-associated cirrhosis

In a multicentre, double-blind, randomized trial in Europe and the USA, 641 patients with chronic hepatitis B virus infection were treated with either adefovir or tenofovir for 48 weeks. Of these, 585 patients entered a 7-year, open-label treatment study using tenofovir, the drug which had shown greater viral suppression in the randomized trial. Liver biopsies at baseline and at 240 weeks of treatment were available for 348 patients. Of the 348 patients studied, 304 (87%) had histological improvement and 176 (51%) had regression of fibrosis. Of the 96 patients with cirrhosis at baseline, 71 (74%) no longer had cirrhosis suggesting that prolonged suppression of viral replication could even reverse cirrhosis (Lancet 2013;381:468–75).

In-hospital cardiopulmonary resuscitation (CPR): The longer the better

Using a registry, researchers identified 64,339 patients with in-hospital cardiac arrests at 435 American hospitals. The median duration of resuscitation before termination of efforts in non-survivors was used as a measure of the hospital's overall tendency for longer attempts. Spontaneous return to circulation occurred in 31,198 of 64,339 (48.5%) patients and 9,912 (15.4%) survived to discharge. Patients undergoing CPR at hospitals with the longest median resuscitation time (25 minutes) had a higher likelihood of return of spontaneous circulation (adjusted risk ratio 1.12, 95% CI 1.06–1.18) and survival to discharge (1.12, 1.02–1.23) compared to those in hospitals with the shortest median resuscitation time (12 minutes). It may be worthwhile continuing CPR a little longer (Lancet 2012;380:1473–81).

Norovirus not scared of dishwashers

Norovirus, transmitted by the faeco-oral route, causes more than half of all episodes of gastroenteritis. Adequate cleaning of plates and cutlery could break the chain of its food-borne transmission. Researchers in the USA assessed the effectiveness of common tableware washing methods in sanitizing tableware of both bacteria and norovirus. The surface of ceramic plates, forks and drinking glasses was contaminated with dairy products inoculated with norovirus, E. coli and Listeria innocua. Washing was done either mechanically or manually using a quaternary ammonium compound (QAC), sodium hypochlorite or tap water. Although both manual and mechanical washing produced a >5-log reduction in the two bacterial species, neither method using either QAC or sodium hypochlorite led to a similar reduction in norovirus. As per the US Food and Drug Administration (FDA) guidelines, a 5-log reduction is the least required to sanitize tableware. Food for thought the next time one eats out (PloS One 2012;7:e50273; doi:10.1371/journal.pone.0050273).

Antibiotic-impregnated catheters for urinary tract infections

In a multicentre, randomized, open-label trial in the UK, 6394 hospitalized adults requiring short-term (<2 weeks) catheterization were assigned to a silver alloy-coated, a nitrofurantoin-impregnated or a polytetrafluoroethylene-coated urinary catheter in a ratio of 1:1:1. The primary end-point of a symptomatic urinary tract infection for which an antibiotic was prescribed by 6 weeks was reached in 12.5%, 10.6% and 12.6% of patients in each of the three groups, respectively. This difference was clinically insignificant. These findings argue against the routine use of silver alloy-coated or antibiotic-impregnated urinary catheters (Lancet 2012;380:1927–35).

Coronary artery bypass grafting (CABG) wins—Again!

In a multicentre trial, 1900 patients with type 2 diabetes and coronary artery disease were randomly assigned to CABG or percutaneous coronary intervention (PCI) with drug-eluting stents. The patients’ mean (SD) age was 63.1 (9.1) years and 83% had three-vessel disease. Patients with left main coronary artery disease were excluded. The primary outcome—a composite of death, non-fatal myocardial infarction or non-fatal stroke—occurred more frequently in the PCI group, with 5-year rates of 26.6% in the PCI group and 18.7% in the CABG group. Although total mortality and myocardial infarctions were less in the CABG group, stroke occurred more frequently—5.2% and 2.4% in the CABG and PCI groups, respectively, at 5 years. Except for the higher risk of stroke, CABG seems to score over PCI, even when drug-eluting stents are used (N Engl J Med 2012;367:2375–84).

Watching the left atrial appendage

Patients with atrial fibrillation who are at high risk of embolic stroke need lifelong anticoagulation. The Watchman left atrial appendage closure device reduces the risk of stroke by preventing embolization. In the PROTECT-AF study, 707 patients with non-valvular atrial fibrillation and at least one risk factor for stroke were randomized to either the Watchman device (n=463) or continued warfarin (n=244). After a mean follow-up of 2.3 years, the primary efficacy end-point of stroke, systemic embolization or cardiovascular death occurred in 3% and 4.9% per 100 patient-years in the Watchman and warfarin groups, respectively, which met the criteria for non-inferiority. Device deployment failed in 12% of patients. The device, awaiting approval by the US FDA, is a promising alternative especially in patients who are not able to tolerate anticoagulation (Circulation 2013;127:720–9).

Artificial sight

Retinitis pigmentosa, the commonest inherited retinal dystrophy, results in loss of vision. The US FDA has recently approved the first implantable prosthetic retina for this disease—the Argus II Retinal Prosthesis System. The device uses a small video camera and transmitter fitted in a set of eyeglasses which wirelessly transmit image data to electrodes implanted in the retina. These signals are converted to electrical impulses which are carried to the brain by the optic nerve. In two trials, it was shown that patients using the system were able to detect the direction of signals are converted to electrical impulses which are carried to the brain by the optic nerve. In two trials, it was shown that patients using the system were able to detect the direction of movement (JAMA Ophthalmol 2013;131:183–9) and could even identify letters and words (Br J Ophthalmol doi:10.1136/bjophthalmol-2012-301525). The device could drastically improve everyday functioning for the 1.5 million people affected worldwide by this disorder.

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