

## Masala

---

### *Cryoballoon ablation for atrial fibrillation*

Isolation of pulmonary veins using catheter ablation is a recommended treatment for drug-refractory paroxysmal atrial fibrillation (AF). A simpler alternative is the use of a cryoballoon to ablate tissue around the opening of the pulmonary veins into the left atrium by applying sub-zero temperatures. The FIRE and ICE trial was a multicentre, randomized trial which compared cryoballoon ablation ( $n=378$ ) with radiofrequency ablation ( $n=384$ ) in patients with drug-refractory AF. The mean duration of follow-up was 1.5 years. The primary efficacy end-point of the first documented clinical failure occurred at 1 year in 138 and 143 patients in the two arms, respectively. Rates of the primary safety end-point of a composite of death, cerebrovascular events or serious adverse events were comparable in the two arms (*N Engl J Med* 2016;**374**:2235–45).

### *HOPE for using statins in lower risk individuals*

The Heart Outcomes Prevention Evaluation (HOPE) 3 trial was a multicentric trial that randomized 12 705 participants with an intermediate risk of cardiovascular disease to receive either rosuvastatin 10 mg daily ( $n=6361$ ) or placebo ( $n=6344$ ). The trial included men  $\geq 55$  years of age and women  $\geq 65$  years of age who had at least one of the following cardiovascular risk factors: elevated waist-to-hip ratio, history of a low level of high density lipoprotein (HDL) cholesterol, current or recent tobacco use, dysglycaemia, family history of premature coronary disease or mild renal dysfunction. After a mean follow-up of 5.6 years, there was a 24% reduction in the primary outcome of a composite of death from cardiovascular causes, non-fatal myocardial infarction, or non-fatal stroke in the rosuvastatin group. There was an excess of cataract surgery and muscle symptoms in patients given rosuvastatin. The authors argue for further liberalization in the criteria for the use of statins for primary prevention of cardiovascular disease (*N Engl J Med* 2016;**374**:2021–31).

### *Sepsis and late mortality*

Does an episode of sepsis contribute to increased mortality at a later point in time? A subset of patients from the US Health and Retirement Study was evaluated to answer this question using a propensity-matched cohort design. A total of 960 patients aged  $\geq 65$  years who were admitted with sepsis were studied along with 777 matched adults not currently in hospital, 788 patients admitted with non-sepsis infection, and 504 patients admitted with acute sterile inflammatory conditions. Late mortality, defined as death occurring 31 days to 2 years later, was 22.1% higher in the group with sepsis compared to adults not in hospital, 10.4% higher compared to patients admitted with non-sepsis infection, and 16.2% higher compared to patients admitted with sterile inflammatory conditions. This increase in mortality persisted for at least 2 years after the episode of sepsis and could not be explained by the pre-sepsis health status of patients (*BMJ* 2016;**353**:i2375).

### *Digital stethoscopes for detecting coronary stenosis*

Researchers from the University of Minnesota recruited 156 patients undergoing elective coronary angiography. Before the procedure, an advanced digital stethoscope was applied to six sites on the anterior chest wall to obtain acoustic signals from blood flowing in the coronary arteries. Arteries were categorized as 'normal', 'diseased' or 'inconclusive' based on the degree of turbulence suggested by the acoustic data. These results were compared, blinded, with those of catheter-based angiography. Angiographically significant stenosis ( $\geq 50\%$ ) was found in 52% of patients. Acoustic detection of stenosis had a sensitivity of 0.7, a specificity of 0.8, a positive predictive value of 0.79 and a negative predictive value of 0.71. Further refinement of the technique could position this modality as a non-invasive test for coronary stenosis (*Am J Med* 2016;**129**:515–21).

### *Physical activity cuts risk of cancer*

The association of leisure time physical activity and the risk of 26 different cancers was studied using data from 12 prospective American and European cohorts with self-reported physical activity. A total of 1.44 million participants with a median age of 59 years, of which 57% were women, were included; 186 932 cancers occurred in the study subjects. High versus low levels of physical activity were associated with lowered risks of 13 cancers including oesophageal adenocarcinoma (42%), liver (27%), lung (26%), kidney (23%), gastric cardia (22%), endometrial (21%), myeloid leukaemia (20%), myeloma (17%), colon (16%), head and neck (15%), rectal (13%), urinary bladder (13%) and breast (10%). Paradoxically, leisure time physical activity was associated with higher risks of malignant melanoma (27%) and prostate cancer (5%) (*JAMA Intern Med* 2016;**176**:816–25).

### *Caregiver, heal thyself!*

Researchers at the University of Toronto enrolled 280 caregivers of patients who had been mechanically ventilated in an intensive care unit (ICU) for at least 1 week. Based on self-administered questionnaires, they collected information on caregivers and patients including depressive symptoms in caregivers, their psychological well-being, health-related quality of life, sense of control over their life and the effect of providing care on other activities. These assessments were performed at 7 days after ICU admission and at 3, 6 and 12 months after the patient was discharged from the ICU. The mean age of caregivers was 53 years, 70% were women and 61% were looking after a spouse admitted in the ICU. Depressive symptoms were found in 67% of caregivers at the initial assessment and in 43% at 1 year. In 16% of caregivers, depressive symptoms failed to improve at 1 year. Markers of a poor mental health outcome in caregivers included younger age, less social support and less sense of control over their own lives (*N Engl J Med* 2016;**374**:1831–41).

VIVEK ARYA