Happiness can cause takotsubo syndrome

Takotsubo syndrome is characterized by a sudden temporary weakening of the heart muscles that causes the left ventricle of the heart to balloon out at the bottom, and can lead to heart attacks and death. Since this condition was first described in 1990, evidence has suggested that it is typically triggered by episodes of severe emotional distress, such as grief, anger or fear, with patients developing chest pains and breathlessness. It now appears that happy events can also trigger takotsubo syndrome (Ghadri et al, 2016).

Researchers systematically analysed data from 1750 patients diagnosed with takotsubo syndrome worldwide. Of the 485 patients who had a definite emotional trigger, 20 (4%) had takotsubo syndrome that had been precipitated by happy and joyful events, such as a birthday party or wedding. The majority (465; 96%) had occurred after sad and stressful events.

Ghadri JR, Sarcon A, Diekmann J et al; InterTAK Co-investigators (2016) Happy heart syndrome: role of positive emotional stress in takotsubo syndrome. *Eur Heart J* (doi:10.1093/eurheartj/ehv757)

Family counselling increases physical activity and improves diet in children

Individualized and family-based lifestyle counselling helps 6–8-year-old children increase their physical activity levels and improve their diet quality during a 2-year follow-up (Viitasalo et al, 2016).

'Children from families who participated in lifestyle counselling were physically more active, ate more vegetables and vegetable-oil-based spreads and had a higher intake of important nutrients than children in the control group,' said Dr Anna Viitasalo, from the University of Eastern Finland.

Viitasalo A, Eloranta AM, Lintu N et al (2016) The effects of a 2-year individualized and family-based lifestyle intervention on physical activity, sedentary behavior and diet in children. *Prev Med* **87**: 81–8 (doi: 10.1016/j.ypmed.2016.02.027)

Effects of CPAP on glycaemic control in patients with sleep apnoea and type 2 diabetes

A pair of randomized controlled trials published in the *American Journal of Respiratory and Critical Care Medicine* highlights the effects that using continuous positive airway pressure (CPAP) to treat obstructive sleep apnoea can have on glycaemic control in patients with type 2 diabetes.

A trial from a team in Spain found that CPAP appears to improve glycaemic control in patients with obstructive sleep apnoea and type 2 diabetes that is not well controlled (Martínez-Cerón et al, 2016).

Dr Francisco Garcia-Rio, professor of medicine at Autonoma University of Madrid, and his colleagues studied results from 50 patients with both obstructive sleep apnoea and sub-optimally controlled type 2 diabetes, who were assigned to CPAP intervention or control. Participants, who ranged in age from 18 to 80 years, did not change diabetes medications during the trial unless medically necessary, nor were they expected to change their diets or level of physical activity.

These researchers found that those using CPAP to control their obstructive sleep apnoea had a statistically significant decrease in glycated haemoglobin levels at 6 months (the decrease at 3 months was not statistically significant), an improvement in insulin sensitivity at 3 and 6 months, and a decrease in insulin resistance at 6 months.

Dr Garcia-Rio said that, despite the small size of the study, the findings suggest that 'early identification of obstructive sleep apnoea in patients with type 2 diabetes, and assessment for metabolic abnormalities in those with obstructive sleep apnoea could reduce the cardiovascular disease risk of patients with these chronic diseases.'

In a separate study (Shaw et al, 2016), researchers in Australia and the USA randomly assigned 298 patients with 'relatively well-controlled' type 2 diabetes and newly diagnosed obstructive sleep apnoea to either treat their sleep apnoea with CPAP or receive usual care. In addition to measuring the change in glycaemic control, researchers studied changes in blood pressure, daytime sleepiness and quality of life over 6 months.

These researchers found no difference between those receiving CPAP and the control group in change in glycated haemoglobin at 3 and 6 months, but a greater fall in diastolic blood pressure over 6 months in the CPAP group compared to controls – a finding that was statistically significant only among those who used CPAP for at least 4 hours a night.

Daytime sleepiness improved significantly among those using CPAP as measured by the Epworth Sleepiness Index. Quality of life between the two groups was not statistically significant overall as measured by the RAND 36-Item Short Form Health Survey. Among those using CPAP for at least 4 hours a night, there was a significant difference with controls on vitality and mental health subscores.

Commenting on the findings, Professor Jonathan Shaw, associate professor and head of population health at Melbourne's Baker IDI Heart and Diabetes Institute, said: 'Obstructive sleep apnoea is common in people with type 2 diabetes, and although we did not find a glycaemic benefit for its treatment, clinicians should have a high index of suspicion for its presence when patients experience daytime sleepiness, snoring and resistant hypertension.' He added: 'Identification and treatment of obstructive sleep apnoea in these patients may lead to clinically meaningful benefits.'

Martínez-Cerón E, Barquiel B, Bezos AM et al (2016) Effect of CPAP on glycemic control in patients with obstructive sleep apnea and type 2 diabetes. A randomized clinical trial. *Am J Respir Crit Care Med* (doi: 10.1164/rccm.201510-1942OC)

Shaw JE, Punjabi NM, Naughton MT et al (2016) The effect of treatment of obstructive sleep apnea on glycemic control in type 2 diabetes. *Am J Respir Crit Care Med* (doi: 10.1164/rccm.201511-2260OC)

Professor Jonathan Shaw, Victor Smorgon Diabetes Centre, Baker IDI Heart and Diabetes Institute, Melbourne

Children in intensive care recover faster when they are given little or no nutrition

Critically ill children are artificially fed soon after their arrival in intensive care as it is assumed that it will help them recover more quickly. However, researchers from University Hospitals Leuven, Belgium, Sophia Children's Hospital Rotterdam, The Netherlands, and Stollery Children's Hospital Edmonton, Canada, have challenged the validity of this common practice (Fivez et al, 2016). Their international, multicentre, randomized, controlled trial shows that receiving little to no nutrition during the first week in intensive care makes children recover faster.

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Professor Greet Van den Berghe, Head of Intensive Care Medicine, University Hospitals Leuven (UZ Leuven), Leuven Belgium

Critically ill children in intensive care are unable to eat independently. The current standard of care for such children is based mostly on the assumption that they need to eat to regain their strength, so practice worldwide is to artificially feed these children during the first days of their stay in intensive care. This artificial nutrition, infused directly into the bloodstream, is meant to strengthen their muscles, prevent complications and speed up their recovery.

This randomized controlled trial involved 1440 critically ill children. The researchers examined whether fasting or receiving very small amounts of feeding during the first week in the paediatric intensive care unit was better for the children than full intravenous feeding.

The results showed that withholding parenteral nutrition for 1 week in the paediatric intensive care unit was clinically superior to providing early parenteral nutrition; late parenteral nutrition resulted in fewer new infections, a shorter duration of dependency on intensive care, and a shorter hospital stay.

'We found that the current practice of feeding children in an early stage does not contribute to their recovery', commented lead author Professor Greet Van den Berghe from KU Leuven / University Hospitals Leuven. '... Children who had built up a nutritional deficiency after receiving little to no feedings had fewer infections, less organ failure, and a quicker recovery than children who had been fed through the intravenous line.'

Fivez T, Kerklaan D, Mesotten D et al (2016) Early versus late parenteral nutrition in critically ill children. *N Engl J Med* (doi: 10.1056/NEJMoa1514762)

Chikungunya could be misdiagnosed as dengue

Chikungunya, a viral disease transmitted by infected mosquitoes, could be misdiagnosed as dengue as both have similar symptoms, including fever, rash, muscle and joint pain (Furuya-Kanamori et al, 2016). This could affect understanding of the prevalence of chikungunya and chikungunya-dengue co-infection, with consequences for diagnosis, treatment and disease control. Treatment of chikungunya is directed primarily at alleviating symptoms. Misdiagnosis could affect how the symptoms of each disease are relieved – with potentially serious consequences.

Researchers from the London School of Hygiene & Tropical Medicine created maps showing the geographical spread of both viruses, current geographical limits and countries at risk of future infection.

Dr Laith Yakob, Lecturer in Disease Vector Biology, said: 'Diagnoses are typically only symptom-based. During dengue outbreaks, or in countries that historically suffer dengue epidemics, clinicians tend not to confirm their diagnosis in the laboratory; dengue infection is assumed. Co-infection is typically only detected during recognized chikungunya outbreaks and this reflects a widespread bias in how these diseases are reported.'

Furuya-Kanamori L, Liang S, Milinovich G et al (2016) Co-distribution and co-infection of chikungunya and dengue viruses. *BMC Infect Dis* (doi: 10.1186/s12879-016-1417-2)

Mycophenolate mofetil effective as first-line treatment for autoimmune hepatitis

New research indicates that mycophenolate mofetil, a drug usually used to prevent rejection after kidney, heart or liver transplant, seems safe and effective in treating autoimmune hepatitis, a serious chronic liver disease that mainly affects women (doi: 10.1111/apt.13584).

Brivaracetam (Briviact) offers new option for patients with uncontrolled epilepsy

Brivaracetam (Briviact) has been authorized as an add-on treatment for partial onset seizures, with or without secondary generalized seizures, in adults with epilepsy (aged 16 years and older). Brivaracetam provides patients with this particular type of epilepsy a new opportunity to better manage their seizures.

Significant clinical response within 6 weeks of golimumab treatment in two-thirds of patients moderate-to-severe ulcerative colitis

The first results reported from the GO-COLITIS study, presented at the 11th Congress of the European Crohn's and Colitis Organisation, highlighted a significant clinical response with Simponi (golimumab) (69%, *n*=141), and demonstrated clinical remission at week six in 38.5% of patients.

10th European Breast Cancer Conference Amsterdam, 9–11 March

Ethnicity unlikely to affect breast cancer biology

Dr Toral Gathani, a clinical epidemiologist at the University of Oxford, discussed her team's findings suggesting that inherent differences between ethnic groups were unlikely to affect breast cancer biology.

Researchers analysed data from over 68 000 women with breast cancer registered in England – 66 192 white women, 1233 South Asian women and 641 black women.

The average age at diagnosis was 5 years lower in South Asian women and black women (55 years) than in white women (60 years). Although South Asian and black women were more likely to have biologically aggressive tumours, there was little difference between ethnic groups after adjusting for factors that could affect the findings, particularly age.

Dr Gathani said: 'Much of the apparent excess of aggressive breast tumours in South Asian and black women is simply because they are younger than white women.'

Gathani T, Beral V, Reeves G, Pirie K, Barnes I (2016) Ethnicity and the tumour characteristics of breast cancer in a large nationally representative sample of women in England. Abstract no 4. European Breast Cancer Conference, Amsterdam, The Netherlands: 9–11 March

Whole breast intensity modulated radiotherapy may not be needed in early breast cancer

Radiotherapy to the whole breast is standard treatment after breast-conserving surgery for women with early breast cancer, even those who have a low risk of local relapse. However, whole breast radiotherapy can cause changes in the appearance of the breast, which may also be firmer and tender to the touch, resulting in psychological distress.

Dr Charlotte Coles, Consultant Clinical Oncologist, Cambridge University Hospitals NHS Trust, Cambridge

Dr Charlotte Coles, Consultant Clinical Oncologist at Cambridge University Hospitals NHS Trust, Cambridge and colleagues from 30 radiotherapy centres across the UK, led by researchers at The Institute of Cancer Research, London, recruited 2018 patients aged over 50 years of age who had had breast conservation surgery for invasive early breast cancer tumours measuring less than 3 cm at their largest point.

Patients were randomized into three groups: 675 had whole breast radiotherapy at the standard dose of 40 Gy to the whole breast (the control group), 674 had 40 Gy to the tumour bed and 36 Gy to the rest of the breast, and 669 had 40 Gy to the tumour bed only; the latter two 'test' groups being two ways of focusing radiotherapy to the tumour bed and giving lower or no dose to the rest of the breast.

All patients were treated with intensity modulated radiotherapy, a technique that can deliver an even dose of radiation, thus minimizing the chances of hotspots of unwanted high doses and reducing the cosmetic problems that can occur after breast radiotherapy. The characteristics of the three groups were very similar and the average age was 63 years.

Dr Coles told delegates at the 10th European Breast Cancer Conference: 'We found after 5 years that rates of local relapse were very low in all treatment groups, including those receiving less radiotherapy. Moderate and marked changes in normal breast tissue were also low across all groups. Follow-up is ongoing and 10-year local recurrence rates will be reported at a later stage,' she said.

In addition to the 10-year follow-up, the researchers intend to investigate patient-reported outcome measures in more depth.

Coles C, Agrawal R, Ah-See ML et al, on behalf of IMPORT TMG (2016) Partial breast radiotherapy for women with early breast cancer: First results of local recurrence data for IMPORT LOW (CRUK/06/003). Abstract no 4LBA. European Breast Cancer Conference, Amsterdam, The Netherlands: 9–11 March

Lapatinib and trastuzumab combination shrinks HER2-positive cancer

Approximately a quarter of women with HER2-positive breast cancer, treated with a combination of lapatinib and trastuzumab before surgery and chemotherapy, saw their tumours shrink significantly or even disappear, according to results from the UK EPHOS-B multi-centre, clinical trial.

Professor Nigel Bundred, Professor of Surgical Oncology at The University of Manchester and the University Hospital of South Manchester NHS Foundation Trust, presented results from 257 women with newly-diagnosed, operable, HER2-positive disease.

As evidence emerged from other trials of the efficacy of the combination of lapatinib and trastuzumab to treat HER2-positive breast cancer, the trial was amended so that the next 127 women were randomized to the control group, or to receive trastuzumab only, or the combination treatment.

Results from the second part of the trial, analysed in February 2016, showed that, as well as seeing a drop in Ki67 (an indicator of cell proliferation), for women who received the combination treatment 11% had pathological complete response and 17% had minimal residual disease. For those who had received only trastuzumab, 0% had pathological complete response and 3% had minimal residual disease, and no control patients had either pathological complete response or minimal residual disease.

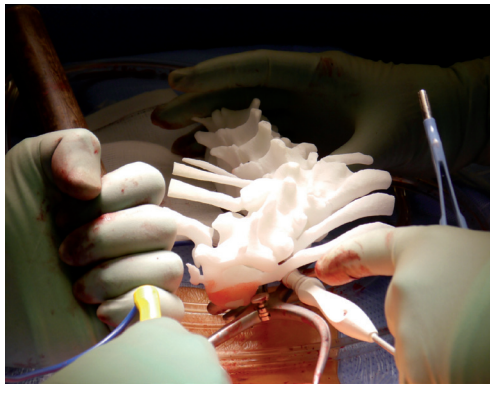
Bundred N, Cameron D, Armstrong A et al (2016) Effects of perioperative lapatinib and trastuzumab, alone and in combination, in early HER2+ breast cancer – the UK EPHOS-B trial (CRUK/08/002). Abstract no 6LBA. European Breast Cancer Conference, Amsterdam, The Netherlands: 9–11 March

Alder Hey surgeons use three-dimensional printed model of patient's spine for reference in theatre

Surgeons at Alder Hey Children's Hospital in Liverpool have become the first NHS team to use a three-dimensional printed model as a surgical reference during an operation.

Surgeons from the specialist orthopaedic spinal team used a three-dimensional printed model of a spine taken from a computed tomography scan of an 8-year-old patient. The model, which was provided by 3D LifePrints and Materialise, was printed in a plastic which could be sterilized and taken into theatre

The three-dimensional model in use during the surgery.



where it was used to guide surgeons during a procedure to correct kyphoscoliosis, a complex congenital spinal problem.

The operation was performed by Alder Hey surgeons, Jai Trivedi, Neil Davidson and Colin Bruce.

Before surgery, the computed tomography scan images were converted into a three-dimensional printable format which allowed a life-size replica of the patient's spine to be printed in three dimensions.

Senior surgeon Mr Jai Trivedi said: 'There is no doubt the model made this complex procedure operation much safer as it allowed for accurate preoperative planning and implementation at surgery. Sterile models that can be held during an operation should prove helpful for other surgeons.'

Alder Hey's orthopaedic, cardiac, craniofacial and radiology teams already work closely with 3D LifePrints, using three-dimensional printing technology to plan complex operations, improve communication between doctors and patients, and facilitate medical learning.

Risk of catching Ebola from survivors 'very low'

A systematic review has shown that while the Ebola virus may persist for some considerable time in certain body locations, it is typically cleared from the blood within 16 days – meaning that the risk of infection from contact with a survivor is low (Brainard et al, 2016).

The research team set out to discover how long the Ebola virus persists in different human body fluids, including blood, urine, semen, sweat, breast milk, faeces and vaginal fluids, to assess how much of a transmission risk survivors pose to their family, communities and medical professionals.

Key findings included that infected blood appears to be the most infectious body fluid, with viral loads observed to be very high, but only 5% of patients carried the virus in their blood after 16 days of illness. The longest amount of time for a survivor to carry the virus in their blood was 29 days. Apart from blood and semen, most other body fluids pose a low infectious risk.

Lead researcher Professor Paul Hunter from Norwich Medical School, University of East Anglia, said: 'This research is important because there has been little evidence to give definitive guidance about which body fluids are infectious and when they pose a risk. Above all, this research strengthens the case for scientific evidence to be used rather than fear when managing infectious diseases such as Ebola.'

He emphasized: 'Transmission from social contact with an Ebola survivor is not something that is likely to be a problem... Nevertheless, ... this is the first time there has been such a huge number of Ebola survivors to study, and it's possible that we will find out that after-effects are more common than previously thought.'

Brainard J, Pond K, Hooper L, Edmunds K, Hunter P (2016) Presence and persistence of Ebola or Marburg virus in patients and survivors: a rapid systematic review. *PLoS Negl Trop Dis* **10**(2): e0004475 (doi: 10.1371/journal.pntd.0004475)

Chronic conditions rise in older people

The number of older people in England living with more than one chronic condition could have risen by 10% in the last decade, increasing the pressure on the NHS (Dhalwani et al, 2016).

NIHR-funded researchers found that more older people now have at least one chronic disease, putting further strain on health budgets amid a rise in long-term conditions and people living longer.

A study, which examined more than 15 000 people in England over 10 years, showed there was an increasing trend in people aged over 50 years developing a second or third disease. It also found that people who were physically active were healthier.

The percentage of older people with multiple conditions, including type 2 diabetes, high blood pressure and arthritis, steadily increased from 31.7% in 2002–3 to 43.1% in 2012–13. Researchers also found that the proportion of older people without a chronic condition decreased over the same period from 33.9% to 26.8%.

Professor Kamlesh Khunti, Professor of Primary Care Diabetes and Vascular Medicine at the University of Leicester based at the Leicester Diabetes Centre, said: 'The prevalence of multimorbidity, where people have more than one chronic condition, in older adults is steadily increasing over time.

He added: 'The current models of care globally are based on the management of individual chronic conditions. However, given the increase in multimorbidity over the past 10 years and the complex needs of these patients, clinical guidelines need to address the challenges in management of multimorbidity and formulate best practices to guide clinical decision making for these patients.'

Dhalwani NN, O'Donovan G, Zaccardi F, Hamer M, Yates T, Davies M, Khunti K (2016) Long terms trends of multimorbidity and association with physical activity in older English population. *Int J Behav Nutr Phys Act* **13**(1): 8 (doi: 10.1186/s12966-016-0330-9)