

### People reluctant to use public defibrillators to treat cardiac arrest

A systematic review suggests that people are reluctant to use public access defibrillators to treat cardiac arrests (<https://doi.org/10.1093/ehjqcco/qcx023>).

The study suggests that many members of the public do not know what an automated external defibrillator is, where to find one and how to use one, despite these defibrillators being suitable for use by untrained members of the public. Although there is variation in the number of people willing to use an automated external defibrillator across the studies analysed, a lack of confidence and fear of harm were common themes. The researchers also found that although members of the public saw the value of automated external defibrillator training most had not undergone training.

### Improving treatment with oral anticoagulants in patients with atrial fibrillation

The impact of a multifaceted educational intervention, vs usual care, on oral anticoagulant use in patients with atrial fibrillation was assessed in a two-arm, prospective, international, cluster randomized controlled trial (doi: 10.1016/S0140-6736(17)32165-7).

Patients were included who had atrial fibrillation and an indication for oral anticoagulation. A total of 2281 patients from five countries (Argentina, Brazil, China, India and Romania) was enrolled. The intervention involved education of providers and patients, with regular monitoring and feedback.

Oral anticoagulant use increased in the intervention group from 68% (804 of 1184 patients) at baseline to 80% (943 of 1184 patients) at 1 year (difference 12%), whereas in the control group it increased from 64% (703 of 1092 patients) at baseline to 67% (732 of 1092 patients) at 1 year (difference 3%). The intervention resulted in a significant increase in the proportion of patients treated with oral anticoagulants.

## First UK guideline for the management of adults with systemic lupus erythematosus

The first UK guideline on the care of adults with systemic lupus erythematosus has been published by the British Society of Rheumatology (Gordon et al, 2017). The clinical guideline is accredited by the National Institute for Health and Care Excellence.

The guideline covers diagnosis, assessment, monitoring and treatment of patients with mild, moderate and severe lupus and is mainly for health professionals in secondary care. While rheumatologists and clinical nurse specialists in lupus will find it indispensable, nephrologists, immunologists, dermatologists, emergency medicine practitioners, GPs and many trainees will also use the guideline.

The guideline's recommendations address the care of patients with common symptoms such as skin rashes and arthritis as well as those with less common but potentially more serious problems like kidney disease. It covers routine monitoring, treatments that may reduce steroid use and second-line approaches if there is a poor response to first choice treatment. It also promotes the referral of patients with the most serious and difficult-to-control disease to specialized lupus centres with experience of new therapies and multidisciplinary team backup.

Professor Caroline Gordon, Professor of Rheumatology in the Rheumatology Research Group, Institute of Inflammation and Ageing, University of Birmingham Research Laboratories, New Queen Elizabeth Hospital, Birmingham and lead author commented: 'This guideline is important because it will help clinicians diagnose lupus appropriately and should improve outcomes for patients by providing evidence-based treatments for lupus irrespective of the disease severity and organs involved. It discusses when new biological treatments should be used and encourages

recruitment to clinical research trials and studies to inform future management of lupus patients.'

She added: 'Once my colleagues in the UK implement this guideline, I would expect that patients will experience measurable improvements in care as a result of earlier diagnosis and more appropriate treatment; they can expect more rapid resolution of symptoms, reduction in disease flares and improvements in their quality of life, with fewer long term complications of the disease and its treatment – and, ultimately, improved survival.'

Gordon C, Amissah-Arthur M-B, Gayed M et al (2017) The British Society for Rheumatology guideline for the management of systemic lupus erythematosus in adults. *Rheumatology* <https://doi.org/10.1093/rheumatology/kex286>

**Professor Caroline Gordon, Professor of Rheumatology, Rheumatology Research Group, Institute of Inflammation and Ageing, University of Birmingham Research Laboratories, New Queen Elizabeth Hospital, Birmingham**



## Gene loci identified for restless legs syndrome

Restless legs syndrome is a prevalent chronic neurological disorder with potentially severe mental and physical health consequences. Clearer understanding of the underlying pathophysiology is needed to improve treatment options. A meta-analysis of genome-wide association studies was undertaken to identify potential molecular targets ([https://doi.org/10.1016/S1474-4422\(17\)30327-7](https://doi.org/10.1016/S1474-4422(17)30327-7)).

Three genome-wide association study datasets were combined with diagnosis data collected in interviews or via questionnaires, involving 15 126 cases and 95 725 controls of European ancestry. Common variants were identified by fixed-effect inverse-variance meta-analysis.

The team identified and replicated 13 new risk loci for restless legs syndrome and confirmed six previously identified risk loci.

## Radiofrequency ablation significantly improves chronic throat irritation and globus sensation

Chronic throat irritation, a permanent globus sensation, a sore or dry sensation in the throat are common symptoms, which are often trivialised and wrongly attributed to gastro-oesophageal reflux disease. However, these are also the characteristic symptoms of patients suffering from displaced gastric mucosa in the oesophagus (ectopic mucosa). A new study has brought a breakthrough in the treatment of patients with this condition (Kristo et al, 2017). A new radiofrequency ablation technique has been successfully used in severe cases.

The symptoms are caused by a section of misplaced gastric mucosa which is found in the oesophagus rather than as normal in the stomach during gastroscopy in nearly 10–15% of people and this results in chronic damage to the larynx as a result of the production of acid and mucous. Until now there has been no safe and effective option for treating pronounced forms of this condition – symptomatic cervical heterotopic gastric mucosa. The first application



**Dr Ivan Kristo, Surgeon, Department of Surgery, MedUni Vienna/Vienna General Hospital, Vienna, Austria**

of radiofrequency ablation brings about a significant improvement in the condition.

‘Radiofrequency ablation is a state-of-the-art, minimally invasive technique that has been developed for treating the precancerous stages and early stages of oesophageal cancer, which we offer on an outpatient basis during a gastroscopy,’ explained Dr Ivan Kristo, lead author of the study and surgeon at the Department of Surgery of

MedUni Vienna/Vienna General Hospital, Vienna, Austria.

He continued: ‘This new technique enables us to deliver a controlled charge of energy that destroys unhealthy tissue while causing minimal side effects. In the patients we have treated so far, the technique produces an improvement that is visible to the doctor and perceptible to the patient.’ The team is now planning a randomized controlled trial of the treatment.

Kristo I, Rieder E, Paireder M et al (2017) Radiofrequency ablation in patients with large cervical heterotopic gastric mucosa and globus sensation: Closing the treatment gap. *Dig Endosc.* <https://doi.org/10.1111/den.12959>

## Saving lives after emergency bowel surgery

The third annual National Emergency Laparotomy Audit (NELA) report analyses the care received by almost 25 000 emergency bowel surgery patients treated in NHS hospitals in England and Wales between December 2015 and November 2016 ([www.nela.org.uk/reports](http://www.nela.org.uk/reports)).

Improvements in the care of patients before, during and after emergency bowel surgeries reduced patients’ average hospital stay from 19.2 days in 2013 to 16.6 days in 2016, saving the NHS an estimated £30 million annually.

Enhanced patient care has also led to the national 30-day mortality rate falling from 11.8% to 10.6% over 3 years, representing approximately 300 lives saved each year compared to 2013–2014. More than 600 local clinical leads working together with nursing colleagues and other collaborators have

contributed to data collection for the audit, and brought about these improvements.

Areas where more improvement is still needed include:

- 24% of hospitals miss the target of getting the most urgent patients to theatre within the expected 2-hour timeframe
  - 22% of hospitals are not meeting the accepted standard of admitting high risk patients directly to critical care after surgery
  - Almost half of all patients were aged over 70 years, yet only 3% of hospitals provide regular proactive assessments from geriatricians for elderly patients after surgery.
- Dr Sarah Hare, NELA National Clinical Lead, said: ‘Although we have made great strides since NELA reporting began in 2013, the inconsistency of care remains an issue we are determined to address.’

### Oral treatment improves glycaemic control in people with type 2 diabetes

A new study has found that semaglutide (a glucagon-like-peptide-1 analogue) taken orally lowered glycated haemoglobin levels over 3 months by up to 1.9% and also aided weight loss (<https://doi.org/10.1001/jama.2017.14752>). This could be beneficial for patients who struggle to inject themselves.

### Mitochondrial transfer from bone marrow stromal cells to blasts seen in acute myeloid leukaemia

Researchers have found that healthy bone marrow stromal cells were made to transfer their power-generating mitochondria to neighbouring cancer cells, effectively ‘recharging’ the acute myeloid leukaemia and supporting the leukaemia to grow (<https://doi.org/10.1182/blood-2017-03-772939>).

### Report highlights lack of equal access globally to palliative care and pain relief

Poor people all over the world live and die with little or no palliative care or pain relief. Of the 298.5 metric tonnes of morphine-equivalent opioids distributed in the world per year, only 0.1 metric tonne is distributed to low-income countries ([https://doi.org/10.1016/S0140-6736\(17\)32513-8](https://doi.org/10.1016/S0140-6736(17)32513-8)), according to the Lancet Commission on Palliative Care and Pain Relief Study Group.

## Patients with rheumatoid arthritis at greater risk of COPD hospitalization

A population-based incident cohort of patients with rheumatoid arthritis with matched general population controls was studied (McGuire et al, 2017). The aim was to evaluate the risk of incident chronic obstructive pulmonary disease (COPD) hospitalization in patients with rheumatoid arthritis compared to the general population.

The cohorts included 24 625 patients with rheumatoid arthritis individuals and 25 396 controls. The incidence of COPD hospitalization was greater in patients with rheumatoid arthritis than controls (incidence rate ratio 1.58; 95% confidence interval 1.34–1.87). After adjusting for potential confounders, patients with rheumatoid arthritis had a 47% greater risk of COPD hospitalization than controls. The increased risk remained significant after modelling for smoking and with varying COPD definitions.

McGuire K, Avina-Zubieta JA, Esdaile JM, Sadatsafavi M, Sayre EC, Abrahamowicz M, Lacaille D (2017) Risk of incident chronic obstructive pulmonary disease (COPD) in rheumatoid arthritis: a population based cohort study. *Arthritis Care Res (Hoboken)* <https://doi.org/10.1002/acr.23410>

## Failure of antifungal therapies is multicausal, not solely related to resistance

Susan Mayor

Resistance to antifungal agents is increasing but the clinical relevance is currently unclear and additional drivers contribute to clinical failure in patients with serious fungal infections, warned Professor Matteo Bassetti, from the University of Udine, Italy, speaking at the 8th Congress on Trends in Medical Mycology (Belgrade, Serbia, 6–9 October).

Supporting this view, he cited a recent study comparing treatment with echinocandins and fluconazole in patients with candidaemia from a urinary tract source. Results showed that nearly one-third (29.7%) of patients were non-susceptible to fluconazole (38/128 episodes) while only 5.5% (7/128) were resistant to echinocandins. However, there was no difference in clinical failure with the two antifungal treatments (17.1% with fluconazole *vs* 20% with echinocandins). Further analysis showed that the only risk factor associated with clinical failure was an early urological procedure (adjusted odds ratio 0.08, 95% confidence interval 0.02–0.31,  $P < 0.001$ ).



Professor Matteo Bassetti, Head, Infectious Diseases Division of the Santa Maria Misericordia University Hospital, Udine, Italy

Further factors associated with clinical failure in patients with serious fungal infections include development of septic shock, failure to provide adequate source control and inadequate antifungal therapy within the first 24 hours of infection. A study in patients with abdominal candidiasis showed that those developing septic shock where the source of their infection was not controlled had a very high 30-day hospital mortality rate of over 60%. A further study in 294 patients with *Candida* bloodstream infections showed

much higher mortality in patients with biofilm-producing isolates (70.0%) compared to those with isolates not producing biofilm (45.7%,  $P < 0.001$ ).

Summing up, Professor Bassetti concluded: ‘In vitro susceptibility to antifungal agents is not the only factor in determining the outcome of patients with fungal infections.’

He added: ‘Other important factors include site of infection, high fungal burden, underlying disease, source control, development of biofilm and a drug’s pharmacokinetics and pharmacodynamics.’

## Invasive aspergillosis still important infection in solid transplant recipients

Susan Mayor

Invasive aspergillosis remains a rare but important infection among patients undergoing solid transplantation with higher rates in those receiving heart and lung transplants, showed new results from the Swiss Transplant Cohort Study reported as a late-breaking abstract at the 8th Congress on Trends in Medical Mycology (Belgrade, Serbia, 6–9 October).

The study retrospectively analysed data for all solid organ transplant recipients at six Swiss transplant centres between May 2008 and December 2014, assessing the incidence and clinical outcomes in patients developing proven or probable

invasive aspergillosis. The centres collected observational data prospectively.

Results showed that 70 of the 3035 patients (2.4%) receiving solid organ transplants developed invasive aspergillosis. The incidence was highest in those receiving heart (7.1%) and lung (8.3%) transplants. The median time between transplantation and onset of invasive aspergillosis was 100 days but with a wide time range (interquartile range 15–275 days) and was shorter in lung transplants (median 11 days, interquartile range 5–103 days) and liver transplants (median 18 days, interquartile range 9–122 days).

Invasive aspergillosis was associated with high mortality, with 16 of 70 (22.9%) of

patients developing the infection dying by 12 weeks. Univariate analysis identified liver transplantation as a risk factor for 12-week mortality (hazard ratio 33.7, 95% confidence interval 4.01–283.51), followed by bacterial co-infection (hazard ratio 2.74, 95% confidence interval 1.02–7.37).

‘Invasive aspergillosis remains a rare but important complication in solid organ transplant recipients, affecting primarily heart and lung transplants,’ said lead author Dr Dionysios Neofytos, from the University Hospital of Geneva, Geneva, Switzerland. He added that co-infection with other pathogens – mainly bacterial and viral – appeared to increase susceptibility to invasive aspergillosis and 12-week survival.



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## Smoking can double the risk of developing hidradenitis suppurativa

Tobacco smokers are twice as likely to develop hidradenitis suppurativa, according to new research (Garg et al, 2017).

Hidradenitis suppurativa is a chronic and recurring

inflammatory disease of the hair follicles, which causes a mixture of boil-like lumps, areas leaking pus, and scarring.

A retrospective cohort analysis looked at patients with an active status in the database over the last 3 years who had race, gender and age information, as well as at least one measurement for body mass index within the study period. Patients who had already been diagnosed with hidradenitis suppurativa before the start of the study were excluded, as were

patients who started smoking after they were diagnosed with hidradenitis suppurativa.

Of 3 924 310 tobacco smokers, 7860 patients were diagnosed with hidradenitis suppurativa during the study period, compared to 8430 cases of hidradenitis suppurativa among 8 027 790 non-smokers, giving an overall incidence among smokers of 0.20% *vs* 0.11% among non-smokers. Overall incidence was highest among these smoking sub-groups: those aged 30–39 years (0.35%), women (0.28%), African Americans (0.46%), and those with a body mass index  $\geq 30$  kg/m<sup>2</sup> (0.33%).

Senior author, Dr Amit Garg, said: ‘This is the first population level evidence that tobacco smoking is a true risk factor for the development of hidradenitis suppurativa. What is not yet understood is whether cessation of smoking can lead to improvement in disease activity.’

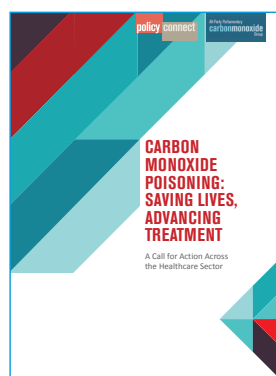
Garg A, Papagermanos V, Midura M, Strunk A (2017) Incidence of hidradenitis suppurativa among tobacco smokers: a population based retrospective analysis in the United States. *Br J Dermatol* <https://doi.org/10.1111/bjd.15939>

## Carbon monoxide poisoning symptoms not being detected in health-care system

An All-Party Parliamentary Carbon Monoxide Group and Policy Connect’s *Carbon Monoxide Poisoning: Saving Lives, Advancing Treatment* report has identified that symptoms of carbon monoxide poisoning are not routinely being detected in the health-care system ([www.policyconnect.org.uk/sites/site\\_pc/files/report/1014/fieldreportdownload/comedreportfinalweb.pdf](http://www.policyconnect.org.uk/sites/site_pc/files/report/1014/fieldreportdownload/comedreportfinalweb.pdf)).

One of the key concerns is that pregnant women are among those most at risk for not being identified as being poisoned, since many of the symptoms are very similar to pregnancy indicators such as nausea and headaches.

The report recognizes the importance of proper training and equipment in the health-care system in order to detect carbon monoxide poisoning.



The report identifies a need to develop guidelines on the management of carbon monoxide poisoning during pregnancy, and that regular carbon monoxide screening should be undertaken throughout a pregnancy rather than just at the very beginning, in order to detect poisoning. While carbon monoxide screening is being undertaken at the first appointment with

the midwife in many maternity services across England the service is not universal.

Carbon monoxide causes the deaths of over 30 people a year and leads to some 200 being admitted to hospital. The experts believe these figures could be a gross underestimation and the actual cost to the NHS is likely to be much more than the current estimate of at least £178 million per annum.

## Timing of gallbladder and weight loss surgery may help prevent complications

There is a strong association between obesity and gallstones, but there is no clear evidence regarding the optimal order of Roux-en-Y gastric bypass surgery and cholecystectomy when both procedures are clinically indicated.

An analysis by Wanjura et al (2017) found a higher risk of complications when cholecystectomy was performed after bypass surgery rather than before.

The analysis was based on data from the Swedish Register for Cholecystectomy and Endoscopic Retrograde Cholangiopancreatography (79 386 patients) and the Scandinavian Obesity Surgery Registry (36 098 patients) from 2007 to 2013.

There was a higher aggregate complication risk when cholecystectomy was performed after Roux-en-Y gastric bypass surgery rather than before (odds ratio 1.35, 95% confidence interval 1.09–1.68;  $P=0.006$ ). A complication after the first procedure independently increased the complication risk of the following procedure (odds ratio 2.02, 95% confidence interval 1.44–2.85;  $P<0.001$ ). Furthermore, there was an increased complication risk when cholecystectomy was performed at the same time as Roux-en-Y gastric bypass surgery (odds ratio 1.72, 95% confidence interval 1.14–2.60;  $P=0.010$ ).

Simultaneous cholecystectomy added 61.7 minutes (95% confidence interval 56.1–67.4 minutes) ( $P<0.001$ ) to the duration of surgery.

Lead author Viktor Wanjura, of Örebro University, Sweden, concluded: ‘For patients with obesity and symptomatic gallstone disease, the best strategy complication-wise is to perform cholecystectomy before gastric bypass.’

Wanjura V, Szabo E, Österberg J, Ottosson J, Enochsson L, Sandblom G (2017) Morbidity of cholecystectomy and gastric bypass in a national database. *Br J Surg* <https://doi.org/10.1002/bjs.10666>