Tom Nolan’s research reviews—15 September 2022

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Cool runnings

The pages of medical journals aren’t the typical place for a Hollywood feel-good film storyline, but I reckon the tale of how a group of people with diabetes collaborated to create the world’s first open-source artificial pancreas and beat the medical device industry at its own game could have the makings of a blockbuster hit. It starts in 2013 when Dana Lewis, founder of the Do-It-Yourself Pancreas System, hacked her continuing glucose monitoring device so that it would wake her at night if her glucose levels became too low or too high. She discovered she wasn’t alone and found hundreds of other people with diabetes and their loved ones who were sharing their DIY solutions and computer code.

Nine years later, results from a randomised controlled trial of the open-source closed-loop automated insulin delivery system (which combines continuous glucose monitoring, calculating insulin requirements, and delivering insulin all in one—the “artificial pancreas”) find that it was safe and well tolerated, and those using the device had over three hours longer per day in their target glucose range than controls, who used a sensor-augmented insulin pump. The study recruited 97 adults and children with type 1 diabetes and followed them over a six month period.


Changing your image isn’t easy

Knowing that x rays are of limited (and often negative) value for most musculoskeletal conditions is one thing, but changing practice can still be a challenge—as we discuss in our latest episode of the Deep Breath In podcast (www.bmj.com/podcasts/deepbreathin).

A randomised controlled trial set in Australia recruited GPs in the top 20% of radiology requesters from over 2000 practices. They sent some of them individualised written audits and feedback on their imaging request rates in a letter from the chief medical officer of Australia. Despite a covid-induced sharp decline in requests across the board, those in the audit and feedback arms of the trial reduced their imaging request more than the control group, but only about 2% more. The median overall rate of musculoskeletal imaging at baseline was 32.3 per 1000 patient consultations—which is anything from one a day to every half an hour, depending on how busy things are.

* JAMA doi:10.1001/jama.2022.14587

Websites in need of cookie cutters

In the US, where abortion is now criminalised, there are concerns that browsing history could be used against those seeking information about abortion services online, according to the authors of a research letter in *JAMA Internal Medicine*. They checked 223 web pages of National Abortion Member facilities and found that 221 of them included a third-party data transfer and 154 included a third-party cookie. They call on abortion clinics to remove these third-party trackers, which collect data that could be shared or sold to law enforcement agencies, from their websites.


Monoclonal antibodies for SLE

Systemic lupus erythematosus (SLE) would be near the top of any list of serious diseases for which more effective treatments would surely make a massive difference to a lot of people. In the US it’s the fifth highest cause of death among Black or Hispanic women aged 15-24 years. Might monoclonal antibody treatment provide a breakthrough? A phase 2 study of the humanised monoclonal antibody litifilimab, where at baseline the 132 participants with SLE had an average of 19 swollen and tender joints, found a greater reduction in number of active joints at 24 weeks in those given litifilimab than in controls at 24 weeks (−15 versus −11.6, P=0.04). Longer, larger studies are needed to explore this treatment further, particularly since secondary outcomes did not support the primary outcome.


Search for a long term partner for aspirin goes on

Poor old aspirin is still struggling to find a lifelong partner goes on. We all thought clopidogrel might be the one—but they could only stay together for a few weeks (before bleeding risk started to outweigh the benefits of dual antiplatelet therapy). The same happened with ticagrelor. Maybe aspirin could do better alongside a drug with more of an X factor? The factor Xa inhibitor asundexian, to be more specific. Unfortunately, in a phase 2, dose finding study of aspirin plus asundexian in patients with non-cardioembolic ischaemic stroke, the sparks weren’t flying: it failed to show any dose dependant reduction in symptomatic recurrent ischaemic stroke and incident covert brain infarcts on MRI. While they may give it another go—perhaps the trial population weren’t right, wonders an editorial—aspirin’s search for a lifelong partner goes on.

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