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## Tom Nolan's research reviews—23 November 2023

Tom Nolan *clinical editor; sessional GP, Surrey*

### Emotional distress affecting outcomes of cancer treatment

Could cancer treatment protocols one day recommend delaying treatment until levels of emotional distress reduce? In the PRADO study of neoadjuvant immune checkpoint blockers to treat stage IIIB-D melanoma, 88 patients completed a baseline questionnaire that included questions to determine if a person is emotionally distressed (“Did you feel tense?”, “Did you worry?”, “Did you feel irritable?”, and “Did you feel depressed?”). Based on their answers, 28 patients were classed as having emotional distress, and they were found to be less likely to respond to treatment and had lower levels of relapse-free survival after two years of treatment (74% versus 91%, adjusted hazard ratio 3.81,  $P = 0.034$ ). Theories to explain these findings include that antitumour immune responses via beta adrenergic or glucocorticoid pathways are impaired by emotional distress.

*Nature Med* doi:10.1038/s41591-023-02631-x

### Disease-modifying drugs for osteoarthritis

About 40% of us will get hand osteoarthritis. Inflammatory osteoarthritis is a common subtype, characterised by signs of synovitis on imaging. A study recruited 97 people aged 40-75 with hand osteoarthritis, pain for most days over the past three months, and synovitis in at least one joint reported on an MRI scan. They were randomised to receive either methotrexate 20 mg weekly or placebo, and were followed up after six months. Methotrexate did seem to have an effect on pain: a reduction nearly 10 mm greater on a 100 mm visual analogue pain score, after adjusting for baseline and other variables, compared with placebo (−15.2 mm from a baseline of 61.6 mm in the methotrexate group versus −7.7 mm from a baseline of 65.2 mm in the placebo group). Whether this is clinically meaningful for patients, particularly when the burden of methotrexate treatment is so high, isn't clear. Further studies will help determine if there is any long term benefit.

*Lancet* doi:10.1016/S0140-6736(23)01572-6

### New treatment hopes for chronic urticaria punctured

Acupuncture is a fairly uncontroversial chronic pain management option nowadays, even recommended by NICE for chronic primary pain as long as the person delivering it isn't in a hospital and is on a band 7 pay scale or lower. Could it also help in non-pain chronic conditions such as chronic urticaria? A randomised control trial recruited 330 people with chronic spontaneous urticaria from three teaching hospitals in China. They were allocated to receive acupuncture, sham acupuncture, or remain on a waiting list for eight weeks. Average symptom scores improved in all groups after four weeks, with

a greater improvement in those receiving acupuncture. But wait a minute before you get your needles out: the difference in symptom improvement wasn't clinically significant.

*Ann Intern Med* doi:10.7326/M23-1043

### Beyond water deprivation for diabetes insipidus

A patient perspective in a *BMJ* Education article on diabetes insipidus (doi: 10.1136/bmj.l321) described the horrible experience of having a water deprivation test: “After several hours of the test, any hope of a trickle of saliva has long gone—your tongue is firmly welded to the roof of your mouth.” Fortunately, newer tests that measure copeptin, a marker of arginine vasopressin (AVP) levels, are available that can more accurately diagnose diabetes insipidus without the patient having to enter a state of water-craving delirium. A head-to-head study of two copeptin tests found that AVP deficiency—formerly known as cranial diabetes insipidus—is more accurately diagnosed with hypertonic saline-stimulated copeptin than arginine-stimulated copeptin (diagnostic accuracy of 95.6% versus 74.4% respectively). However, patients tended to prefer the simpler, shorter process of the arginine test, which requires fewer blood draws and isn't contraindicated in heart failure or epilepsy.

*N Engl J Med* doi:10.1056/NEJMe2311293

### A new wireless broadband provider

A new type of broadband provider was announced in *Nature Medicine* last week: the human body. According to the creators of the broadband acousto-mechanical sensing (BAMS) system “the human body generates various forms of subtle, broadband acousto-mechanical signals...with potential application for continuous physiological monitoring.” The BAMS system is a small wireless sensor that is placed on the skin to detect these broadband signals. Several can be linked up to create networks of sensors to track gastrointestinal activity, swallowing, and respiratory airflow. The paper shows how researchers applied this technology to people with chronic lung disease and neonates in neonatal intensive care units. For these specialist clinical applications it might prove valuable, but let's hope it doesn't get rolled out as another wearable consumer health tracking wellness gadget that society doesn't need.

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