Transcranial magnetic stimulation: an item number is justified

Evidence shows that transcranial magnetic stimulation is a safe and effective treatment for drug-resistant depression

Depression is the leading cause of disability globally. The condition is painful for the patient (and may end in suicide), distressing for relatives and friends and challenging to clinicians. One-third of patients with depression do not respond to the first antidepressant medication, the likelihood of achieving remission diminishes with each additional medication, and one-third will not respond to any known medication.

When medication fails, electroconvulsive therapy (ECT) may be a useful option. In selected patients, ECT is highly effective, but it requires specialist services (eg, an anaesthetist and anaesthetic and recovery room nursing) and entails anaesthetics, seizures, confusion, temporary memory disturbance and headaches. Therefore, costs, side effects and stigma may render ECT unacceptable to some patients.

Transcranial magnetic stimulation (TMS) is a treatment for major depressive disorder (MDD). It uses an electromagnet placed on the hair or scalp to generate minor electrical activity in a localised region of the cortex. TMS does not involve anaesthetics, seizures or memory disturbance and has high patient acceptance.

The safety and therapeutic benefits of TMS in the treatment of MDD that has not responded to medication was first shown in 1995. Subsequently, there have been at least 59 sham controlled trials, with most of them finding beneficial effects. In addition, there have been 30 systematic reviews and meta-analyses on the effects of TMS, and also naturalistic studies that have shown the safety, tolerability and effectiveness of TMS in the treatment of medication-resistant MDD in the real-world clinic.

Many professional and service bodies endorse TMS as a treatment of medication-resistant MDD — to list them all would exceed the reference limit. Prominent examples include the American Psychiatric Association, the Canadian Network for Mood and Anxiety Treatments and an especially commissioned group of European experts. The Australian and New Zealand College of Psychiatrists, the National Institute for Health and Care Excellence in the United Kingdom and the international World Federation of Societies of Biological Psychiatry also endorse this type of treatment.

TMS has no Medicare Benefit Schedule item number, as applications were rejected in 2007 and 2014, and consequently, availability is limited to various academic, private and some public settings. This limited access to the therapy is consistent with the deprioritisation of mental health services in general — mental health spending lagging far behind its ranking as a burden of disability.

The costs involved in TMS treatment are considerable. A device may cost around $70 000, and a patient chair costs around $5000. In addition, a psychiatrist must be involved and a trained operator must be constantly present. A course consists of 20–30 treatments delivered over 4–6 weeks. Except for those patients who are able to access one of the few public TMS services, this treatment is available through private outpatient services and has a cost of $170–300 per treatment and a total cost of around $6000 per course, which, naturally, excludes most patients.

Moreover, another route to TMS treatment is available to some privately insured patients: some private hospitals meet the costs of TMS services for admitted patients through insurance company contributions to the cost of hospitalisation. However, such arrangements may lead to patients waiting for sufficient deterioration to justify hospitalisation, or seeking hospitalisation before it is necessary to gain treatment — neither of which is optimal.

The 2007 application for a Medicare item number failed, in part, because TMS was incorrectly believed to have less antidepressant potency than ECT. However, there is a place for both — as there is for antibiotics and amputation. TMS is particularly effective in the treatment of affective-cognitive symptoms, whereas ECT is most effective in the treatment of vegetative symptoms. Expert opinion recommends that “TMS should be considered before pursuing ECT,” and that “both of these treatment options should be available”. The item number application in 2014 failed mainly because of questions about the cost effectiveness of TMS compared with other treatments, but recent overseas studies have found TMS to be more cost-effective than ECT.

The treatment of MDD has enjoyed few forward leaps. ECT in the 1930s and the monoamine oxidase inhibitors (followed by the tricyclic antidepressants) in the mid-20th century are the most notable examples, and it is argued that TMS is potentially of this order of importance. TMS has been a field of study and of limited clinical service for over two decades. Evidence proves it to be safe, potent and cost-effective in treating resistant MDD, and comprehensive psychiatric services should provide both ECT and TMS. An item number for TMS would enable equitable availability and proper use of this important therapeutic advance.

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References are available online at www.mja.com.au.


