CASE REPORT

Use of intramuscular methadone in managing intravenous drug abuse

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SUMMARY

A 30-year-old woman was referred to the Acute Pain Team for their advice on how to manage her current pain, in light of her unique pre-admission medications. On questioning it was discovered that the patient was receiving 50 mg of intramuscular methadone daily, in the community. She was a former intravenous drug user who had been enrolled into a methadone substitution programme for 10 years and had been receiving her methadone intramuscularly for the past 6 years. It had been discovered that her addiction was not solely to opioids but, moreover, to the process of injecting as well. She was diagnosed with obsessive compulsive disorder, with a needle fixation, and started on the intramuscular methadone regimen on which she has maintained abstinence from heroin for 6 years.

BACKGROUND

Oral methadone replacement therapy is a widespread, mainstream treatment for heroin addiction. Methadone, being a long-acting μ -opioid agonist, with a half-life of 24–36 h,¹ can prevent the withdrawal symptoms associated with abrupt heroin cessation, making cessation attempts more likely to be successful. Methadone tolerance and dependence frequently replace the heroin habit; however, this is deemed beneficial as repeated intravenous administration of an unsterile product, using unclean equipment and by untrained personnel, will likely result in blood borne virus transmission, abscess formation, septicaemia and thrombosis. Furthermore, variations in the potency and the availability of illegally sourced opioids make overdose more likely. Therefore, dependence on a stable, oral dose of a long-acting opioid, such as methadone, remains preferable to an unpredictable and unclean heroin addiction.

Needle fixation can be defined as repetitive puncturing of the skin with or without the injection of psychoactive drugs (drugs that can produce mood changes and distorted perceptions) via intravenous, subcutaneous or intramuscular routes, irrespective of the drug or drugs injected or the anticipated effects of the drug.²

CASE PRESENTATION

A 30-year-old Caucasian woman was referred to the Acute Pain Team following lower segment caesarean section of her sixth child by the staff responsible for her postnatal care. In addition to her postoperative pain, she had pre-existing sciatica that she had developed following a recent bout of pneumonia, which had forced her to sleep sitting

up for a protracted period of time. The patient had been prescribed paracetamol and as it had shown little efficacy it had been withdrawn. The reason for the specialist referral was the patient's pre-existing treatment with 50 mg of methadone intramuscularly, which encouraged the doctors responsible for her care to seek expert advice.

The patient had previously used heroin intravenously for a number of years and had attempted, unsuccessfully, to abstain for 4 years while on a methadone maintenance programme consisting of oral methadone. A member of the Community Drugs Team with a history of mental health identified that she displayed many of the hallmarks of obsessive compulsive disorder (OCD) such as intrusive, obsessional thoughts related to needles with associated anxiety and subsequent relief attained through completing injection-based compulsions. After formal investigation, the patient was given a diagnosis of OCD with needle fixation. While the patient herself retrospectively recognised many traits characteristic of OCD throughout her life, she did not suspect herself to suffer from OCD until the point of her formal diagnosis. At this point it was suggested that her heroin addiction could be separated into two separate addictions; one to opioids and one to compulsions relating to her needle fixation. Therefore it was decided that a trial to assess whether a regimen of long-term intramuscular methadone would simultaneously manage both of her addictions would be undertaken. Sterile needles and clinical grade methadone would minimise risks associated with repeated injections and would certainly outweigh the risks of continuing intravenous drug abuse. In addition to her history of heroin use, the patient reported a few isolated historical uses of intravenous crack cocaine over 5 years ago.

After her OCD was diagnosed, medical management of the condition failed, as due to the severe side effects of the medication, treatment was discontinued. Before her recently completed pregnancy, the patient reported that she had been enrolled in a cognitive-behavioural therapy (CBT) programme to treat her OCD, however, this was temporarily discontinued as it was deemed too stressful during her pregnancy. At the present time her anxiety issues are largely managed by her daily injections, which are associated with a ritual consisting of a certain method of preparation; lining up the ampules, drawing up the methadone and injecting it all personally. Notably, when as inpatient, she insisted on preparing and administering the injections herself and refused nursing assistance.

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TREATMENT

In addition to recognising the importance of continuing the patient's baseline opioid and 'needle requirements' through her intramuscular methadone, the patient was prescribed further opioids, delivered through a patient controlled analgesia pump, to improve management of her immediate postnatal pain while she was in hospital.

DISCUSSION

Even though cases of concurrent opioid dependence and OCD with needle fixation are rare, this author could find no other literature detailing the use of long-term, intramuscular methadone maintenance therapy. Intramuscular methadone is manifestly inferior to oral methadone, in the long-term outpatient setting, due to the health risks inherent with repeated intramuscular injection and its failure to help patients escape their needle-centric behaviours; however, it would appear to be a novel way of combatting opioid dependence with concurrent needle fixation. In patients who would go on to have their OCD successfully managed by medication or CBT at some point in the future, intramuscular methadone could serve as a stepping stone to giving up needle centred compulsions and possibly substance misuse entirely.

In patients such as this, effective treatment of their OCD may be impossible if they are still dependent on illicit, injected opioids, as their use is frequently associated with an erratic lifestyle and poor compliance with treatments. Therefore, patients with a needle fixation, in whom heroin abstinence would aid their OCD treatment, may not find it possible to maintain their heroin abstinence aided purely by oral methadone, which would only treat their opioid addiction but not satisfy their compulsive needle behaviours.

However, it should be remembered that repeated self-administered, intramuscular injections carry risks such as abscesses, cellulites, tissue necrosis, granulomas, muscle fibrosis, contractures, haematomas as well as accidental injury to vessels, bones and peripheral nerves.³

As methadone is a class A, schedule 2 controlled drug,⁴ it is subject to a number of legal regulations as well as specific guidelines for its use in substance misuse programmes. Since there is no documented precedent for the use of intramuscular methadone for the maintenance of heroin abstinence, this regimen poses a challenging question about the regulatory and legal foundation underlying this treatment. The guidelines released in 2007⁵ by the Department of Health have a clear focus on avoiding the illegal diversion of controlled drugs from substance misuse programmes. However, this guidance also suggests that patients whose management with optimum oral methadone treatment fails can be considered, under specialist supervision, for injectable intravenous opioid maintenance treatment. Despite this, the Department of Health Guidance lacks mention of intramuscular methadone as a potential treatment. In their 2003 report on injectable methadone as a therapy for refractory heroin addiction, the National Treatment Agency concludes

"there is a very limited clinical place for prescribing injectable methadone" and again makes no mention at all of intramuscular methadone.⁶

In conclusion, it is unlikely that intramuscular methadone will ever become a mainstream treatment for substance misuse programmes as it fails to part users from their needle-based behaviours in the way that oral methadone does, there is a greater risk of diversion for illicit use and there are significantly more medical complications from intramuscular administration than oral administration. However, in the very small subset of patients where heroin addiction and needle compulsions overlap, intramuscular methadone could remain a treatment of last resort; to be undertaken with intense supervision and as part of a multidisciplinary approach involving psychosocial, psychiatric and pharmacological interventions.

Learning points

- ▶ Needle fixating compulsions are possible and should be considered in intravenous drug users.
- ▶ Patients with pre-existing opioid requirements, from methadone maintenance, illicit drug use or chronic pain treatment, must have their baseline opioid requirements met in addition to any acute pain relief, if withdrawal is to be avoided.
- ▶ In patients where an obsessive compulsive disorder is a hindrance to their compliance with treatment, consider atypical treatments to best accommodate their specific requirements.

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