Your selected document

▶ Naltrexone implants compared to methadone: outcomes six months after prison release.

Lobmaier P.P., Kunøe N., Waal H.

European Addiction Research: 2010, 16(3), p. 139–145.

Request reprint using your default e-mail program or write to Dr Lobmaier at p.p.lobmaier@medisin.uio.no

In the first study of its kind opiate-dependent prisoners in Norway were randomly allocated to a six-month implant which blocks the effects of heroin or to methadone which substitutes for heroin as a way of bridging the period after release. Among the few interested in either option, they led to equivalent reductions in opiate use and crime.

Summary This account draws on another report on the study analysed by Findings.

In five Norwegian prisons the study aimed to randomly allocate prisoners who had been dependent on opiates before starting their sentences to either methadone maintenance or to a naltrexone implant as a way of promoting continuity of treatment on release and avoiding relapse to heroin use. Treatments were started about a month before their release date. No attempt was made to 'blind' staff or patients to which treatment they had been allocated to.

Pharmacologically the two treatments are at opposite poles; methadone is an agonist which has effects similar to heroin; naltrexone is an antagonist which has no psychoactive effects of its own but blocks the effects of heroin and other opiate-type drugs. In prison methadone doses were gradually increased to 80–130mg per day, normally considered high-dose therapy. The implant form of naltrexone is inserted under the skin. In the form used in the study, blocking effects last for five to six months, avoiding the need to take the medication daily and in theory overcoming the main shortcoming of oral naltrexone – that patients usually stop taking the pills and resume heroin use.

Over one and a half years to January 2007 the study was publicised directly to inmates through prison health services and referrals were also sought from criminal justice staff, prison health services and social workers. Prisoners were free to accept or decline

participation with no impact on their sentences.

Of the 111 inmates who agreed to see the researchers and were found to qualify for the trial, most (65 before and two after random allocation) subsequently declined to participate, leaving 44 who were included in the analyses. All but a few of the 111 intended to build on their enforced break from opiates in prison by remaining abstinent on release, and this was the main reason for refusing treatment.

Six months after their release from prison, an attempt was made to follow-up all the patients whether or not they had started treatment in prison. Those who could not be contacted were assumed to have relapsed immediately after release.

Main findings

Seven of the 23 patients allocated to naltrexone refused implantation because they wanted methadone or some other treatment. Ten of the 21 allocated to methadone did not start treatment, most because they were unable to arrange continuity of treatment from community social services. The upshot was that 11 started methadone treatment in prison (of whom two stopped before release due to side effects) and 16 were implanted with naltrexone − in total 27 of the 111 patients seen by researchers and who had had been opiate dependent before entering prison. None of the 16 implants were removed.

Despite the fact that 17 of the 44 patients did not initiate treatment in prison, compared to the six months before their imprisonment, on average in the six months after release the frequency of use of heroin and illicit benzodiazepines had significantly declined. From using heroin nearly every day before prison, after release use was down to 15−20 days a month. Days per month on which crimes were committed also fell significantly by 4−5 days a month to on average every other day. Neither on these measures nor on the days the former prisoners 'survived' before relapsing to heroin use were there any significant differences between prisoners allocated to methadone versus those allocated to naltrexone.

Over half the implanted patients experienced headaches, poor appetite, nausea, sleep disorders, restlessness or irritability . Though possibly related to the naltrexone, generally these maladies were minor and transient, and none of the 16 implants was surgically removed due to site reactions or patient request. None of the patients who had started treatment in prison died during the follow-up period.

The authors' conclusions

As assessed at the six-month follow-up, allocating prisoners to either of the two treatments led to comparable reductions in illicit drug use and crime. There were differences in treatment entry and retention. Naltrexone was more often refused but (by the nature of a long-lasting implant) also more often continued to exert its effects over the six months after release from prison. Methadone was acceptable to more prisoners but harder to initiate because of the need to arrange post-prison treatment, and harder to stick with after prison, possibly because of the requirement that patients attend the clinic every day. These results should be seen in the light of the fact that many formerly opiate-dependent prisoners were not willing to join the study, leaving a selected minority who may have been unusually willing to countenance long-term blockade of the effects of opiate-type drugs.

For inmates who accept and initiate this treatment in prison, compared to methadone or oral naltrexone, naltrexone implants reliably bridge the vulnerable prison-community transfer period, potentially helping avoid what are otherwise frequent overdose deaths.

FINDINGS In the UK, neither implants nor depot injections of naltrexone have been licensed for medical use; they can still be (and have been; 1 2 3 4) used, but patient and doctor have to accept the added responsibility of a product which has not yet been shown to meet the safety and efficacy requirements involved in licensing.

Other related reports have also been analysed by Findings. Another report from the same study focused on the acceptability of the attempt to randomly allocate prisoners to the treatments. It found that inmates refused treatment in prison usually because they misjudged their ability to maintain abstinence on release. At the same time this misplaced confidence and features of the prison environment impeded treatment entry. Motivating inmates to accept treatment in prison involves cooperation between prison health services, criminal justice staff and (to ensure continuity and support on release) community treatment providers, as well as researchers if the treatment offer is part of a study. For methadone in particular, continuity often could not be arranged. Unless removed, naltrexone implants automatically continued on release, but fewer inmates were prepared to go through with this treatment.

A sister study from the same research team tested naltrexone implants versus normal aftercare for opiate-dependent patients leaving Norwegian inpatient treatment centres.

Data from implanted patients in these and another Norwegian study have been amalgamated in a report which assessed the degree to which the implants actually did block the effects of opiate-type drugs and prevent opiate use. Drawing on data from the same patients, a further report assessed how many would continue the treatment by having a second implant after six months.

Findings from Norway

From these Norwegian reports it seems that six-month naltrexone implants can be an effective and lasting aid to curbing opiate use for the minority of patients motivated to aim for opiate abstinence and prepared to accept that opiate effects may be unavailable to them for six months. Because it does not require the patient to choose to enter aftercare treatment, the option may have a particular role in safeguarding patients emerging opiate-free from prison or other protected environments such as inpatient detoxification centres. However, and despite being motivated to sustain abstinence and being implanted, many if not most patients try opiates again and some do so repeatedly. Details below.

As with oral naltrexone, the main limitation of implant treatment is its acceptability to patients. In Norway acceptability will have been heightened by restricted access to substitute prescribing programmes, particularly for people unwilling to contract to forgo not just heroin, but persistent substance use of any kind. Nevertheless, recruitment to both studies seems to have been slow. The minority of potential participants who joined were probably highly motivated to sustain abstinence from opiates because they were prepared to risk random allocation to a procedure which promised to enforce this for up to six months. In the aftercare study they had just completed abstinence-oriented residential care and in the prison study were keen to sustain their enforced abstinence on release.

Across the Norwegian studies implant patients substantially reduced their opiate use during the six months the initial implants were active and in the aftercare study, did so substantially and significantly more than patients allocated to relatively weak normal aftercare arrangements. However, even among this selected and presumably motivated set of patients, the implants did not totally abolish use of opiate-type drugs and nor did they reduce some other forms of drug use. Just over half the implant patients tested the naltrexone blockade by using opiate-type drugs, and about a quarter of the sample did so repeatedly. Most of this opioid use occurred when naltrexone levels were above those known to block the pleasurable effects of heroin and few patients experienced the usual opiate-induced euphoria or 'high'. Perhaps because nearly a third allocated to implants refused these, in the prison study in particular, the reduction in opiate use was on average modest and no greater than among patients allocated to methadone maintenance.

Of the 61 patients implanted in all the studies, three had the initial implant removed. After six months, 44 said they wanted to be re-implanted and 31 actually were, showing that for some patients the implants can be a long-term treatment rather than simply an enforced break from opiates.

Other studies

In studies a minority of patients experience complications at the insertion site which lead the implant to be removed. Another potential problem is that implants impede opiate-based pain relief. To cater for this, patients have been given cards to carry which specify the presence of a naltrexone implant, its expected duration, possible pain relief options, and contact details for staff responsible for the implant. Without this (as reported in Australia) hospital staff sometimes make futile attempts to relieve pain using opiate-type medications.

Other occasionally severe reactions to implants and injections have been observed, but generally side effects are mild and/or short-lived and treatable. As with any abstinence-based treatment, overdose due to lost tolerance to opiate-type drugs is a serious concern. However, the few studies to date suggest these products protect against overdose while they are active, and that in caseloads prepared to undertake these procedures, opiate overdose reductions can outlast the active period of the implants. These findings are consistent with findings from Britain (1) and elsewhere (1 2 3 4 5) tentatively suggesting that long-acting naltrexone can be used to create an opiate-free period which extends beyond the initial blockade, sometimes aided by further administrations (1 2). See background notes to an earlier Findings analysis for more on these important issues of adverse effects and overdose protection.

This draft entry is currently subject to consultation and correction by the study authors.

Last revised 24 February 2012

▶ Comment on this entry • ▶ Give us your feedback on the site (one-minute survey)

Top 10 most closely related documents on this site. For more try a subject or free text search

Treatment research in prison: problems and solutions in a randomized trial STUDY 2010

The Drug Treatment Outcomes Research Study (DTORS): final outcomes report STUDY 2009

Pharmacotherapies for the treatment of opioid dependence: efficacy, cost-effectiveness and implementation

guidelines REVIEW 2009

Challenges to antagonist blockade during sustained-release naltrexone treatment STUDY 2010

Naltrexone implants after in-patient treatment for opioid dependence: randomised controlled trial ABSTRACT 2009

Guidelines for the psychosocially assisted pharmacological treatment of opioid dependence DOCUMENT 2009

Opiate antagonist treatment risks overdose STUDY 2004

A randomized clinical trial of methadone maintenance for prisoners: results at 12 months postrelease STUDY 2009

Oral naltrexone maintenance treatment for opioid dependence REVIEW 2011

Initiating methadone prescribing in prison promotes its continuation on release STUDY 2006