Psychopathological disorders in heroin addicts
and administration of risperidone during rehabilitation

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Summary

The topic of the present study is the clinical picture of psychopathological symptoms during post-withdrawal periods in heroin addicts. Craving symptoms can be compared to productive psychopathological symptoms, and their intensity usually corresponds to the severity of depressive disorders in heroin ex-addicts. Risperidone is therefore a preferred choice for craving control when opiate maintenance therapy is unavailable (as it is currently in Russia). This antipsychotic showed its effectiveness and safety during prolonged anti-relapse therapy in the out-patient treatment of heroin addicts.

Key Words: addiction - heroin - risperidone - psychopathological symptoms - treatment

Introduction

The search for the most effective neuroleptic with a low level of toxicity — those which allow administration over a long period during the stabilization of remission — currently constitutes the main task of many Russian researchers, who are working on new methods of treating and rehabilitating drug-addicted patients and on improving already familiar concepts and recommendations pertinent to the use of psychototropic medicines. This is mandatory, partly because drug addicts are difficult to cure, on account of the severity of psychopathological symptoms during abstinence and postabstinence.
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periods, and partly because of the absence of durable remissions; in addition, there is a lack of effective clinical programmes in out-of-hospital and rehabilitation practice.

In treating addicts, most researchers consider it necessary to combine general medical care with the administration of naltrexone or maintenance therapy based on methadone, which is of great importance in cases of HIV positivity or in criminal addicts (11, 12). The spread of HIV epidemics, with rising numbers of HIV-positive and HIV-affected drug addicts, calls for a change in approach towards the treatment and rehabilitation of these patients, as well as changes in current legislation. It should be borne in mind that in the Russian Federation the administration of narcotic substances as maintenance therapy is still prohibited by law (17).

The craving syndrome is one of the leading syndromes in addiction, including heroin addiction. Craving is such a powerful factor that it regulates and dominates a patient’s behaviour. In focusing on the choice of ways and methods able to set up a craving blockade, our viewpoint is that craving may be equated to a productive psychopathological disorder. In fact, we fully agree with Altshuler (1), who wrote about the productively psychopathological character of alcohol-craving in alcoholics. A craving for drugs becomes manifest through a variety of different symptoms and syndromes. It may arise periodically, or persist permanently.

Many years of clinical observations have shown that emotional disorders (which include emotional lability, affective and dysphoric reactions) are among the psychopathological disorders most often seen in heroin addiction. During the long periods of withdrawal and remission, these disorders stabilize into a specific psychic deficit (2, 4, 8, 14-16). Patients become unduly sensitive to even the slightest psychic discomfort. They become more and more inclined to react inadequately to various, even minimally psychotraumatic situations; these aspects heighten the abnormality of behavioural responses, including psychopathia-like ones. These patients are characterized by a bad mood which in its turn contributes to the actualization of craving and often leads to relapses. This so-called “acquired affective lability” is most clearly seen during remission, as described in the literature (14-16).

Drug abuse, like heroin abuse, induces significant distortions of personality, including the “narcomanic” personality type (4, 6, 7). The most long-lasting characteristics of the “narcomanic” personality, which tend to persist during the period of treatment, are antisocial behaviour, conflict lability, impaired control of one’s behaviour, apathy, asthenia, mood lability and passivity (5-7, 18).

Thus psychopathological features in heroin addicts are characterized by emotional disorders involving affective pathology and behavioural deviations, depression and antisocial personality distortions.

This study aims to describe clinical and psychopathological manifestations of heroin craving during the post-abstinence period and during remission, as well as the search for the “safest” and most effective anticraving treatment during the post-withdrawal period.
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Material and Methods

28 patients (men) addicted to heroin were included in the study. The age of patients was 18-35 (with an average of 24.65 ± 5.94) and disease duration was between 10 months and 9 years (with an average of 3.81 ± 1.42 years). Over half the patients were under 27 years. The age at which these patients first used narcotics ranged between 13 and 26 years (with an average of 20.97 ± 4.57 years). Almost all the patients had a history including at least one remission from drug abuse history. The average duration of narcotics use after the latest remission was six months. Before using heroin, most patients had smoked cannabis occasionally; a few had used it systematically. Some patients had tried psychostimulants or hallucinogenic substances, though they had no addiction to them. Most patients started to use heroin by snorting, and later, as their tolerance grew, they switched to injections. Patients were treated in hospital for 3 weeks, after which they participated in an out-of-hospital rehabilitation programme lasting at least 6 months. The research methods used were clinico-psychopathological, follow-up, statistical and psychological (Raven’s test, the memorizing of 10 words, and Shulte’s method).

Results and Discussion

After the acute withdrawal symptoms were blocked, the psychopathological disorders began to dominate, and in most cases corresponded to a patient’s strong drive for narcotics. These were affective disorders, which usually included dysphoric depression, responses of psychopathological type, involving irritation, dissatisfaction with surroundings, excitement and inadequate behaviour. At this stage the most important decision to be made was the correct option of an antidepressant with neuroleptic therapy, which was appropriate to the clinical manifestation of the disease.

Depression, irritation, behaviour of psychopathological type and other psychic deviations disguised the actual expressions of the aggravated craving for narcotics, though patients themselves were not always aware of this. They thought that they had already recovered, demanded to be discharged from hospital and misunderstood the fact they were driven by a wish to change their condition. In general, the level of craving for drugs was correlated with the severity of psychopathological symptoms. A certain parallelism could be seen between the severity of depression and the intensity of craving. The intensification of depressive symptoms, with their characteristic dysphoric colouring was almost always evidence for the aggravation of a craving for drugs which needed adequate therapeutic treatment. The use of medication to suppress the craving and eliminate the corresponding physical symptoms was of major importance during the rehabilitation period.

At this stage (during the period of rehabilitation) patients suffered from asthenia, with low levels of intellectual potential and creative activity. Cognitive decline took the form of flat judgments, problems with concentration, and a liking for pointless talk. As early as the Twenties, many researchers working on morphine addiction noted
memory disturbances, a decrease in mental productivity, especially creativeness, intensified fatigue and an inability to plan future activity. These authors\(^{(2,9,10,14)}\) noted in her observations that patients with opium addiction were marked out by impairment of psychical functions, and problems with mobilizing and concentrating attention, as well as the inability to make an effort to implement a proposed task. Their quality of thinking, however, remained at a high level, as long as the patient was concentrated enough. Patients’ decline in intellectual activity against a background of asthenia and apathy led them to relapses during the initial period when remission was being set up. These symptoms were compatible with an aggravation of craving, but with a quite different colouring. In this case passiveness, an unwillingness to read, learn or work, to take the initiative in looking for a job or in solving even the simplest everyday problems had led our patients into a state of deadlock. In their view, the only way to resolve this situation was to take up narcotics again.

The anti-relapse, supporting therapeutic treatment during the remission period, did not always give the expected positive effect for a number of reasons. This situation was especially common in patients with a long history of addiction, but was also frequent in those who, by contrast, had just started to use narcotics.

The first reason is that some patients stopped using the recommended medication after discharge; in other words, it was sometimes hard to keep patients in the maintenance medication programme.

The second reason, the long period of taking recommended neuroleptics such as phenotiazine and other medications, often led to side-effects. Because of the lack of fully operative dynamic medical supervision, patients reacted by modifying their own doses and adopting a personal regimen for taking medicines; in this way a negative reaction to such medical treatment (comprising not only neuroleptics, but antidepressants and many other medicines, including nootrops) had been inadvertently created. In such cases psychotherapeutic treatment, too, had little effect.

The use of risperidone in narcology practice has already been reported\(^{(3,13,19,20)}\). In any case, the clinical characteristics of heroin-addicted patients noted above, especially during the period when remission is being set up, became the reason why risperidone is included in the out-patient maintenance programme for treating and rehabilitating heroin addicts.

Risperidone (A note) is an atypical antipsychotic from the chemical group of benzosoksasols. In the first place it influences the serotonergic and dopaminergic neurotransmitter systems; its latter effects make it different both from classic neuroleptics and from other atypical antipsychotics. The profile of risperidone’s neurochemical activity is characterized by principal binding with D2-dopaminergic and 5-HT2-serotonergic receptors, as well as with α1- and α2-noradrenergic ones, while risperidone possesses no tropism with holinergic, istaminergic or D1-dopaminergic receptors.

In our practice the treatment began on the 21–28th day (on average it began on day 25.4 ±3.83) after the most recent use of a narcotic. The problem was to keep patients within the limits of the treatment-rehabilitation (out-of-hospital) maintenance pro-
gramme. In this context it was vital to chose the optimum dose of the medication in accordance with the out-of-hospital treatment. In cases of schizophrenia, risperidone is used in pill form in large dosages – as high as 12 mg/24 hours, taking into account its normothymic action; by contrast, in gerontology it is used in dosages as low as 0.5-2 mg/24 hours. As our patients did not show any gross positive psychopathological symptoms, we considered such doses to be too large (or too small) and adopted a dose of 2-6 mg/24 hours. The other available neuroleptics often cause negative reactions among addicts (due to their knowledge of the side-effects of these medicines, including expressions of neurolepsia), so we decided to refrain from administering them. Risperidone was administered daily at a dose of 2-3 mg morning and night during the first 2 months. In the next 2-4 months of rehabilitation patients were given 2-4 mg (depending on the character of their psychopathological symptoms), in most cases once a day (in the morning).

A special registration form comprising 23 questions was drawn up to account for the basic symptoms during the rehabilitation period. It was first filled in before treatment with risperidone, then again on the 3rd, 7th, 14th, 21st, 30th, 45th, 60th and 90th day of risperidone administration, i.e. nine times in all.

This form was used to assess the position of a control group of 12 heroin addicts of about the same age and with the same period of addiction as the risperidone-treated group. It should be noted that we were only able to follow up the patients in the control group, once out of hospital, during the first two months. In most cases they stopped their visits to the rehabilitation programme after two months.

It should be remembered that, on average, up to the 25th day the basic psychopathological symptoms were partly eliminated by “traditional” therapeutic treatment in hospital (without risperidone, as a rule); so, during the next 2-3 weeks many symptoms were only minimally present or actually disappeared as a result of risperidone administration. After one month of out-of-hospital treatment and rehabilitation, most patients had no symptoms to complain of, and the main points discussed at patients’ visits were education, the search for work, and the problem of inactivity. There was a clear need for the administration of risperidone to continue over the whole period of 6 months in 12 patients, i.e. 42.8 % of the patients observed. One patient had to take risperidone for 8 months.

It is important to note that most of the symptoms were not prominent before risperidone administration began. Only 6 positions were close to the mean evaluation corresponding to the description of the symptoms in the postwithdrawal period.

Before risperidone treatment began, the level of dysphoria was recorded as 1 point, and the level of anxiety as 1.57 points; on the 14th day of treatment the level of dysphoria was down to 0.85 and on the 30th day to 0.28. Similarly, the anxiety level fell from 1.57 points to 0.57 on the 14th day and to 0.14 on the 30th. Irritation fell during the first 2 weeks from 1.42 to 0.85 points; there was a less marked fall in lability of affect, from 1.85 to 1.14 points over two weeks and to 0.85 over the first month (Table 1).

Beginning with the first month of treatment, asthenia became considerably less
<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Days of treatment</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>0*</td>
</tr>
<tr>
<td>Poor mood</td>
<td>1.71</td>
</tr>
<tr>
<td>Good mood</td>
<td>0</td>
</tr>
<tr>
<td>Irritability</td>
<td>1.42</td>
</tr>
<tr>
<td>Dysphoria</td>
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<tr>
<td>Gloominess—pessimism</td>
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<tr>
<td>Anxiety</td>
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<tr>
<td>Affect lability</td>
<td>1.85</td>
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<tr>
<td>Motor retardation</td>
<td>1</td>
</tr>
<tr>
<td>Hypochondria</td>
<td>0.71</td>
</tr>
<tr>
<td>Motor restlessness (akathisia)</td>
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</tr>
<tr>
<td>Non-assiduity</td>
<td>0.85</td>
</tr>
<tr>
<td>Agitation, uneasiness</td>
<td>1.85</td>
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<tr>
<td>Psychomotor excitation (behaviour of psychopathological type)</td>
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</table>
Table 1. Dynamics of psychopathological disorders in heroin addicts during the postwithdrawal period when setting up remission, against a background of risperidone administration (in rehabilitation programmes)

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Days of treatment</th>
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<tbody>
<tr>
<td></td>
<td>0*</td>
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<tr>
<td>Quick exhaustibility</td>
<td>1.71</td>
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<tr>
<td>Weakness</td>
<td>1.85</td>
</tr>
<tr>
<td>High fatigability</td>
<td>1.57</td>
</tr>
<tr>
<td>Apathy, indifference</td>
<td>1.57</td>
</tr>
<tr>
<td>Absence of desires</td>
<td>1.42</td>
</tr>
<tr>
<td>Passivity</td>
<td>2.14</td>
</tr>
<tr>
<td>Craving for drugs: conscious</td>
<td>2</td>
</tr>
<tr>
<td>conscious</td>
<td>1.57</td>
</tr>
<tr>
<td>Drug–induced dreams</td>
<td>0.85</td>
</tr>
<tr>
<td>Sleep disorders</td>
<td>1.57</td>
</tr>
</tbody>
</table>

* Risperidone was administered after acute withdrawal syndrome had been blocked, i.e. on the 21-28th day after the latest use of a narcotic.

DEGREE TO WHICH A SYMPTOM WAS PRESENT (IN POINTS):
0 – symptom absent           0 – before Risperidone administration
2 - symptom evident          1 – symptom poorly evident
3 - symptom clearly evident  0
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marked: gradually, by the end of the third week of treatment with risperidone, our patients felt considerably less exhausted (improving from 1.71 points to 0.57), and less weak (improving from 1.85 points to 0.71), while increased fatigue decreased too (from 1.57 points to 0.57). Certainly, up to the 60th day of rehabilitation asthenic disorders decreased even without risperidone, but they did not improve so quickly or markedly.

After only a week of treatment, patients’ mood had already improved a little. Poor mood before treatment was estimated at 1.71 points; on the 14th day it reached 1.28 points, and on the 30th and 45th days it was recorded as 0.85 and 0.57, respectively. It should be noted that during the treatment period we tried to avoid administering antidepressants, or used them in minimum doses. In only two cases did we have to include antidepressants in our therapeutic schedule for a short time, because these patients failed to show better mood while being treated with risperidone monotherapy. In some cases during treatment (at the end of the third week of taking risperidone) some improvement of mood took place (from 0 to 0.42 of a point).

The same is true of apathia and abulia. Patients became more active. Inertia, weakness, apathy and indifference became less marked. Before the initiation of therapy with risperidone, the intensity of these disorders was assessed as 1.57 points, whereas after 14 days it had fallen to 0.85 point, after 30 days to 0.71, after 2 months to 0.57 and after 3 months to 0.14. The 30th day of treatment with risperidone corresponded to the 51-58th day after the latest use of a narcotic. Asthenia and apathetic-abulic disorders showed improvement by this time in patients without risperidone, too, but in most of these patients they persisted and were still evident. Thus, asthenia in the control group was estimated on the 45th day at 1.6 points, and apathy at 1.2 points, i.e. in the control group these disorders were much more severe than in patients treated with risperidone. Passivity before the administration of risperidone was assessed at 2.14 points, but at the end of the second week of risperidone treatment it had already fallen to 1 point and after 2 and 3 months to 0.57 and 0.28 of a point, respectively.

One very important finding was that, with risperidone treatment, the background pathological craving for narcotics was blocked much faster. It was often unconscious and was blocked by risperidone up to the second week without recourse to any other neuroleptics. Before risperidone administration the conscious craving for narcotics was assessed at 2 points, and the unconscious at 1.57; at the end of the third week of risperidone treatment, craving had fallen to 0.57 point. Patients just avoided talking to a doctor about narcotics. However, two patients, though they denied their craving, still admitted to using alcohol (drinking beer) from time to time.

By the 30th day sleep disorders had disappeared completely and narcotic dreams hardly disturbed patients at all.

To sum up, risperidone influenced mostly affective and behavioural disorders and the crucial syndrome of addiction connected with them – pathological craving, together with disorders such as quick exhaustibility, asthenia, and the apathetic-abulic syndrome. Not one of the treated patients demonstrated an exacerbation of craving for narcotics.
One important result is that risperidone has no negative effects on cognitive functions, a great advantage over other neuroleptics. In fact, we noticed an improvement in IQ. Before risperidone treatment, IQ averaged 85.4, but on the 30th day of treatment it was up to 107.5. Patients in the control group who were not taking risperidone also had an IQ over 100, but those treated with risperidone turned out to be quicker and better achievers. In addition, research on the ability to concentrate attention (Schulte’s method) showed a clear tendency towards improvement. There was a clear tendency towards improvement in direct (mechanical) memory, as assessed by the 10-word test. However, the differences in these data compared with those for the control group were not so dramatic.

One must now touch on the very important problem of HIV-infected addicts. In this group one should take into account the aggravations that may be brought about by individual complex therapies relying on immune medicines, vegetostabilizing nootropics or other psychotropic drugs (even those with minimum side-effects). There were no HIV-infected patients in the present study, but, as we have already pointed out in previous studies, we recommend the use of risperidone in addition to the traditional schemes of treatment and rehabilitation of these patients (17).

Everything, that has been stated above points to the advantages of including risperidone in therapeutic programmes for treating and rehabilitating patients addicted to opium (especially heroin) not only in hospital, but also when patients are at home. This is the most efficient factor in the long-term anti-relapse treatments that fall within the complex of rehabilitation measures.

**Final Comments**

1. Some distinctive affective disorders were observed in most patients during their out-of-hospital treatment and rehabilitation. Disorders such as affective lability, hypochondria, asthenia, apathy, carelessness, passivity, and inability to work or read persisted over a long period. In this context, behavioural deviations and aggression occupied a special place.

2. At all stages of the disease our patients showed psychic instability, which contributed to an easily provoked craving for narcotics; this was quite often expressed by psychopathological disorders. The intensity of craving corresponded to the severity of psychopathological symptoms and vice versa. Some parallels can be drawn between depressive symptoms and symptoms of craving. In this connection, these patients needed a long rehabilitation programme (lasting as much as 6 months, or more) with administration of neuroleptics involving minimum side-effects.

3. Against the background of the long-term use of risperidone, these patients demonstrated the decline of affective tensions and cruelty, the absence of notable upheavals in emotional background, dysphoric reactions, behaviour of psychopathological type and compulsive craving for narcotics. Levels of asthenia and apathy decreased, and behaviour became better organized. One important outcome was that none of
the treated patients demonstrated an exacerbation of their craving for narcotics.

4. The administration of risperidone did not call for the use of additional neuroleptics or of the correctors used in current therapies. There was no evidence of extrapyramidal symptoms. In cases of severe depression, antidepressants were administered only in one or two cases. Risperidone had no negative effects on cognitive functions, unlike other neuroleptics. Among our patients, interest in everyday life was restored, and communicative functions improved.

5. The results of this study make clear the advantages of including within practical treatment the atypical neuroleptic — risperidone. It is a safe normothymic able to provide maintenance, long-term antirelapse therapy in the out-of-hospital treatment of opiate addiction. In the complex that comprises rehabilitation measures, this approach makes possible a striking improvement in the social adaptation of addicted patients and in their quality of life.

References

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A note.
Risperdal Consta – the prolonged action form of Risperidone. During the last 3 months of the study, 6 patients who had been treated earlier with Risperidone per os, were successfully switched to Risperdal Consta. They were given 25 mg of Risperdal Consta every 2 weeks. The use of Risperdal Consta in treating drug addiction needs to be analysed further.

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