therefore, α-MSH produced by sources such as the placenta masks any contribution from fetal nervous tissue. Possibly, however, the concentration of related peptides produced by the nervous tissue, such as α-MSH or enkephalin and endorphin, may be raised in the amniotic fluid associated with a fetal neural tube defect, and we are now examining this possibility.

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Abuse of pentazocine

Pentazocine (Fortral) was first marketed in the United States in 1967 as a powerful non-narcotic, non-addictive analgesic. Despite increasing evidence of abuse, official1 and commercial opinion has remained largely unchanged. In the data sheet for pentazocine this statement appears, "... abrupt discontinuation in patients receiving large doses has occasioned only in mild withdrawal symptoms. Withdrawal has raised few problems."2

True addiction to pentazocine has been reported.3 In common with other drugs it is widely used by those who abuse drugs and is available on the black market. We report here six cases that have been under our care (table), and an illustrative case report.

Case report

A 20-year-old pharmacy technician, previously not a drug user, began injecting herself intravenously with pentazocine two years ago during a period of personal crisis. She tried several times to withdraw from the drug but failed because of the severity of withdrawal effects. When admitted to Queen Elizabeth Hospital in June 1977 she was taking 300–400 mg pentazocine daily. She had dental tracking and thrombophlebitis of both arms, and widely dilated pupils. Abrupt discontinuation of the drug was followed by a withdrawal syndrome which lasted for two weeks and included severe cramps; severe abdominal pain; backache, nausea, and vomiting; anorexia; sweating; agitation; and a severe depression of several weeks' duration which did not respond to tricyclic antidepressants. Most symptoms were alleviated by a combination of chlorpromazine, aspirin, and metoclopramide. She was not abusing any other drug.

She has now been rehabilitated and has remained free from further drug abuse. She is the only pentazocine addict known to us to have been successfully withdrawn and to be no longer using drugs. Her withdrawal symptoms were similar to those of our other patients who withdrew from pentazocine.

Comment

Our six patients represent the tip of a much wider problem, and we know from them of others in Birmingham who regularly abuse pentazocine but have not sought medical help. The drug is obtained by theft, forgery, and overprescribing, as reported.4 Withdrawal from pentazocine is difficult and relapse is frequent. The withdrawal symptoms are severe and in many ways resemble those of diamorphine. Many initially take the drug for "kicks" rather than for medical reasons, but the number of abusers among the medical and para-medical professions is disturbing. Many abusers develop tolerance, tending to increase the dosage. Euphoria is a major reason for repeated administrations (though the main reason for continuing abuse is to avoid withdrawal effects).

Those who use pentazocine by injection suffer the same medical complications as other parenteral drug abusers—abscesses, induration, and cellulitis if used intramuscularly, and dermal tracking and thrombophlebitis if used intravenously. We believe that careful prescribing of the drug will not prevent abuse. As with narcotic abuse, only statutory controls are likely to be effective and consideration should be given to reclassifying pentazocine as a controlled drug.


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Details of six known pentazocine abusers

<table>
<thead>
<tr>
<th>Patient</th>
<th>Sex</th>
<th>Age (years)</th>
<th>Occupation</th>
<th>Source of drug</th>
<th>Daily dose (mg)</th>
<th>Route</th>
<th>Initial reason for taking</th>
<th>Withdrawal symptoms</th>
<th>Relapsed</th>
<th>Other drugs abused</th>
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<tr>
<td>1</td>
<td>F</td>
<td>23</td>
<td>Nurse</td>
<td>Black market, theft</td>
<td>180</td>
<td>Intramuscular</td>
<td>Kicks¹</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>2</td>
<td>F</td>
<td>23</td>
<td>Nurse</td>
<td>Prescription</td>
<td>240</td>
<td>Intramuscular</td>
<td>Medical</td>
<td>Yes</td>
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<td>Yes</td>
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<tr>
<td>3</td>
<td>M</td>
<td>38</td>
<td>Train driver</td>
<td>Prescription</td>
<td>180</td>
<td>Intramuscular</td>
<td>Medical</td>
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<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>26</td>
<td>Nurse</td>
<td>Theft, forgery, black market</td>
<td>600</td>
<td>Intravenous</td>
<td>'Kicks'</td>
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<td>No</td>
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<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

¹ 'Kicks' refers to the subjective feeling produced by the drug, not to the withdrawal effects.