Eur Psychiatry 2002 ; 17 : 107-7

S0924933802006363/COR

Mirtazapine overdose with benign outcome

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(Received 3 April 2001; accepted 9 October 2001)

The antidepressant mirtazapine (MTZ) was introduced in the market for the first time in The Netherlands, in 1994. Until now, few data have been available about the risk of MTZ overdose since there have been only five reports (MEDLINE, March 2001) of attempted suicide with this drug [1-5].

We report a case of MTZ overdose because of suicidal intention, with full recovery and without any complications.

A 63-year-old woman affected by bipolar disorder, depressive phase, was admitted to a general hospital 3 hours after ingestion of over 30 mirtazapine (Remeron®) tablets (30 mg). There was no history of serious current or previous medical illness. In the previous 30 days, the patient had been taking mirtazapine (15 mg/d), citalopram (20 mg/d), risperidone (2 mg/d), and lorazepam (1 mg/d). The patient's father and brother had committed suicide by a fall. Two sisters and one brother of the patient suffered from mood disorder. On admission, the patient was wakeful and apparently oriented. Vital signs, ECG, and physical examination were normal. Ipecac syrup was administered to induce vomiting. Since the patient's clinical signs remained stable, she was transferred to a psychiatric intensive care unit. In the following days, vital signs, ECG (6), laboratory tests, and physical examination remained normal. Body weight was 60 kg. Four days after the mirtazapine overdose, the patient was treated with lithium (up to 300 mg, t.i.d), valproate (up to 500, b.i.d.), and flurazepam (30 mg, at bedtime) with moderate improvement.

MTZ is well adsorbed after oral administration, reaching peak plasma concentrations within 2 hours. Steady-state plasma concentrations are achieved within 3 to 5 days. MTZ is extensively metabolized after oral administration. Major pathways of biotransformation are demethylation and hydroxylation followed by glucuronide conjugation. The mean elimination half-life of MTZ after oral administration ranges from 20–40 hours (mean half-life of 37 hours for females). Around 100% of the oral dose is excreted via urine and feces within 4 days.

The patient had taken at least 30 times a normal daily dose of MTZ . She was admitted 3 hours after MTZ overdose. Thus, the peak plasma concentration was likely to have already occurred. However, the patient's clinical condition remained stable, without harm or complications. She presented only moderate sedation without any abnormality in vital signs, ECG, laboratory tests, or clinical signs.

In accordance with previous reports, MTZ seems to be a safe drug in overdose, at least when there is no multiple drug involvement. However, long-term systematic surveillance is needed before drawing any firm conclusion on this issue.

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