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Akathisia after Cyclic Antidepressants Poisoning

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A 54-year-old depressive woman was admitted to the emergency department with a Glasgow Coma Scale of six (E1V1M4) and hypothermia (34°C). A drug overdose was early suspected by history as the patient was treated by tricyclic antidepressants (TCA). The maximal ingested dose was 1000 mg for amitriptyline and 8400 mg for clomipramine, and the delay from ingestion was unknown. The admission serum concentration was 56.2 ng/ml (therapeutic, 50-200) for amitriptyline, 1117.7 ng/ml (150-300) for clomipramine and 628.9 ng/ml (150-300) for desclomipramine. The electrocardiogram showed sinus rhythm (77/min), with normal QRS duration and a QTc interval at 480 msec. The hemodynamic condition was stable with an arterial blood pressure of 141/57 mmHg. Treatment included mechanical ventilation in the intensive care unit and passive rewarming. Extubation was possible 12 hours after admission, and the patient did not experience any serious cardiac manifestations. However, she developed anticholinergic encephalopathy with confusion, agitation, dysarthria, dilated pupils, dry and flushed skin, but no fever. The most striking clinical finding was uncontrolled movements in both legs (Video), and to a lesser extent, in arms and face. Some improvement was noted after benzodiazepines administration and a complete resolution was observed after two days.

Akathisia is a movement disorder frequently associated with the use of antipsychotic drugs that are dopamine-receptor D2 antagonists. Akathisia usually consists of two components, subjective restlessness and typical movements such as

shuffling of the legs, pacing, shifting weight from one leg to the other, and rocking movements of the trunk. Akathisia as extrapyramidal symptom is seldom reported after therapeutic doses or overdoses of TCA.¹ The theoretical mechanism of the anticholinergic-induced dyskinesias is not clear and should result from a relative dopaminergic-cholinergic imbalance in the basal ganglia. In this condition, treatment with benzodiazepines is safer than with physostigmine.²

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