Desferrioxamine-Induced Acute Neurosensorial Deafness

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Dear Sir,

The chelating agent desferrioxamine (DFO) has been successfully used in the treatment of dialysis encephalo-pathy [1] and other Al-related disorders in patients on long-term hemodialysis. This drug has been regarded as having minimal side effects. There may be mild local reaction at the injection site, anaphylactic reactions, cataracts [2] and in recent reports ocular toxicity has been described [2, 3]. A few months ago, Olivieri et al. [4] have reported auditory toxicity in patients with β -thalassemia major or Diamond-Blackfand anemia and transfusional iron overload treated with high doses of DFO. We present herein a patient with end-stage renal disease who developed an acute and reversible neurosensorial deafness on the usual doses of intravenous DFO for the treatment of Al accumulation.

Case Report

A 41-year-old woman with chronic renal failure (CRF) on maintenance hemodialysis since 1974 showed high plasma Al levels (107 $\mu\text{g/l}$) in a ratine control which rose to 276 $\mu\text{g/l}$ after a DFO infusion test (2 g of DFO after the hemodialysis session). She was diagnosed as having Al accumulation and DFO (18 mg/kg i.v. after each hemodialysis session) was started. She had no clinical or EEG evidence of dialysis encephalopathy nor evidence of osteomalacia. An audiometric exam previous to DFO treatment was completely normal. After having received an accumulative dose of 38 g of DFO, she complained of severe and rapidly progressive deafness. The audiometric examination demonstrated a severe and bilateral neurosensorial deafness. She denied taking other potential ototoxic drugs. DFO neurotoxicity was suspected and the drug was withdrawn. One month after drug withdrawal she completely recovered from her deafness both clinically and audiometrically.

The effectiveness of DFO in chelating iron and Al overload [5] and the dramatic effects of this drug in the treatment of dialysis encephalopathy [1,5] and Al-related disorders has led to its widespread use in dialysis units. In general, DFO has not been associated with serious side effects, apart from ocular toxicity [2, 3]. Although auditory involvement has been described in patients with β -thalassemia major anemia and transfusional iron overload receiving high doses of DFO [4], this complication has not been previously reported in patients with CRF. The toxicity is characterized by an acute neurosensorial deafness that is reversible upon drug withdrawal. Contrasting with the patients of Olivieri et al. [4] our patient showed toxicity in a subacute form and received doses considered to be low and safe (18 mg/kg after each dialysis session), which

suggests an idiosyncratic mechanism. We concluded that patients with CRF receiving DFO should be periodically monitored for prevention and early detection of auditory toxicity.

References

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