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Dangers of "EDTA"

This letter is intended to raise medical practitioners' awareness of the dangers of two similar sounding forms of edetate: edetate calcium disodium and edetate disodium. Edetate disodium has been reported as causing fatality when either confused with edetate calcium disodium or used outside of indication. This risk is currently increased in New Zealand due to difficulties in sourcing edetate calcium disodium and greater availability in hospital pharmacies of the disodium form.

Edetate (ethylenediamine tetraacetate, EDTA) is available as edetate calcium disodium (variously described as calcium disodium versenate, calcium disodium EDTA, sodium calcium edetate, calcium EDTA or Versenate) and as edetate disodium (also described as disodium EDTA or disodium edetate); either drug may simply be referred to as EDTA.

Both are parenterally administered chelating agents; albeit with differing uses and toxicity. Edetate calcium disodium is indicated for "the reduction of blood levels and depot stores of lead in lead poisoning (acute and chronic) and lead encephalopathy, in both paediatric and adult populations.";[1] whereas edetate disodium has existing indications for use in "selected patients for the emergency treatment of hypercalcaemia and for the control of ventricular arrhythmias associated with digitalis toxicity.".[2]

It is important to note that the disodium form avidly binds calcium and can induce hypocalcaemia, tetany and even cardiac arrest with three deaths reported in the United States during the period 2003–2005.[3] In these cases edetate disodium was administered for: lead chelation in a child, treatment of autism in another child, and the removal of "heavy metals" in an adult. All deaths a result of cardiac arrest and in each case the drug was either mistaken for edetate calcium disodium or used for an unapproved indication.[4]

These deaths prompted a Federal Drug Administration (FDA) investigation resulting in the withdrawal of approval for edetate disodium in the US market due to limited indication and the availability of alternative products offering superior risk-benefit profiles.[5]

It is important to be aware that this drug is both currently available in New Zealand and included in the PHARMAC Pharmaceutical Schedule (Section H) listing of pharmaceuticals that may be used in District Health Board (public) hospitals.[6] Its inclusion in the Schedule as an antidote (specifically for "Removal and Elimination") likely following a hospital pharmaceuticals review by a Hospital Pharmaceuticals Subcommittee and the Pharmacology Therapeutics Advisory Committee (PTAC).[7]

It is of concern that recent survey (March to April 2014) of 24 New Zealand hospital pharmacies identified no facility with sufficient stock of edetate calcium disodium to fully manage a (lead poisoned) adult patient. However, edetate disodium was present in five hospitals. This raises the potential for either confusion regarding the correct form of "EDTA" or use of edetate disodium outside of its current indications—with

potentially fatal consequences. This also highlights the broader issue of the inappropriate use of abbreviations in prescriptions.

Clinicians are reminded that these similarly named drugs are not interchangeable, and both medical practitioners and hospital pharmacists are urged to review their requirement for edetate disodium and consider removal of this drug from pharmacy shelves.

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