Lithium neurotoxicity – a review

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Abstract

Introduction: Lithium is commonly used in Psychiatry, either to treat Bipolar Disorder or as an add on treatment in Unipolar Depression; it has also been used as an off-label treatment in several other fields of Medicine. Side effects are usually gastrointestinal, weight gain and tremor; neurotoxicity is an uncommon but serious adverse reaction of lithium therapy.

Objectives: Brief review of literature concerning neurotoxicity of lithium with an emphasis on clinical syndrome and management.

Methods: A PubMed database review, using “lithium neurotoxicity” as a keyword.

Results: Lithium toxicity can be acute, chronic or acute-on-chronic. In acute toxicity neurological signs are delayed whereas in chronic toxicity they predominate. Lithium encephalopathy refers to a global neurological dysfunction attributed to lithium and which usually reverses upon cessation and treatment. Onset tends to be gradual and progress to coma and occasionally death. Symptoms do not correlate with lithium concentrations, and toxicity can occur with levels within the standard therapeutic window. In patients medicated with lithium attention must be paid to factors that may interfere with serum lithium levels, such as dehydration, drugs, or pre-existing conditions. Aggressive treatment with fluid resuscitation and hemodialysis, sometimes requiring multiple sessions due to rebound, is the rule and should be undertaken based on clinical features and not serum lithium levels. Rarely, symptoms will persist beyond 2 months of lithium cessation, a condition known as syndrome of irreversible lithium-effectuated neurotoxicity.

Discussion and Conclusions: In any patient taking lithium who develops a clinical picture of neurotoxicity this possibility should be considered, regardless of serum lithium levels and prompt treatment should be initiated.

Supplementary material: Complete presentation available at http://ijcnmh.arc-publishing.org

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