

# **Application of the Cockcroft-Gault method to estimate lithium dosage requirement**

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摘要

## **Abstract**

The aim of the present study was to assess the precision and bias of a priori methods in the estimation of lithium dosage requirement among bipolar patients. The charts of 82 Diagnostic and Statistical Manual of Mental Disorder-fourth edition bipolar patients with previous history of lithium intoxication were reviewed. After excluding patients who had discontinued lithium treatment, 69 patients were entered to the study. Another 60 bipolar patients without history of lithium intoxication were also included in the study. The demographic data regarding factors thought to affect serum lithium concentrations, including gender, weight, and renal function, was retrospectively collected. Predicted daily lithium doses were calculated by using the new equation derived by the present authors and a priori methods proposed by Pepin et al., Zetin et al., Terao et al. and Keck et al. Mean error was calculated to assess the precision and bias of each a priori method. The Zetin method, the Terao method, and the Keck method had a significant tendency to overpredict dosage requirement. The Pepin method significantly underpredicted dosage. Only the 95% confidence interval of mean error of the present authors' equation was across zero. The present authors' equation represents a precise approach to estimate the lithium dose requirement and is easy to calculate. Regardless of the accuracy of each a priori method in predicting a patient's drug dosage, there is no substitute for proper serum drug concentration monitoring and good clinical judgment. Predictions made by any method should always be assessed clinically before applying its use in a patient