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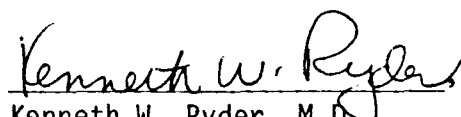
A Comparison of Measurements of Lithium Concentrations
Using Flame Photometry and Atomic Absorption Spectrophotometry

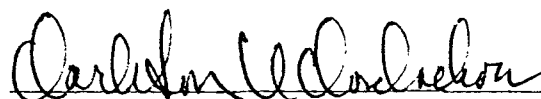
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Submitted to the faculty of the Graduate School in partial
fulfillment of the requirements for the Degree Master of Science
in the Department of Pathology Indiana University

December, 1984

This is to certify that the thesis entitled "A Comparison of Measurements of Lithium Concentrations Using Flame Photometry and Atomic Absorption Spectrophotometry" has been accepted in partial fulfillment of the requirements for the M.S. Degree for Patricia L. Villescas.


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Date: December, 1984

ABSTRACT

A COMPARISON OF MEASUREMENTS OF LITHIUM CONCENTRATIONS USING FLAME PHOTOMETRY AND ATOMIC ABSORPTION SPECTROPHOTOMETRY

BY

PATRICIA L. VILLESAS

Master of Science in Pathology

Indiana University School of Medicine

Indianapolis, Indiana, 1984

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Lithium determinations were compared in relation to precision, accuracy, and convenience on three different instruments: the atomic absorption spectrophotometer, the flame photometer using potassium as the internal standard, and the flame photometer using cesium as the internal standard. Linearity studies showed that all instruments were linear from 0.5 to 3.0 mmol lithium per liter. Precision studies demonstrated that the atomic absorption spectrophotometer was less precise than either of the flame photometers. Sera from thirty patients receiving lithium therapy were analyzed on all instruments; no significant differences in results were found. Recovery studies and comparison with assayed control substances showed that there were no differences in accuracy among the three instruments. I found the flame photometer using cesium as the internal standard to be the most convenient to use.

TABLE OF CONTENTS

	Page
SIGNATURE PAGE	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
VITAE	v
ABSTRACT	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	ix
LIST OF GRAPHS	x
CHAPTER	
I Introduction	1
History	1
Clinical Uses	1
Proposed Mechanism	1
Excretion and Half Life	2
Absorption and Distribution	3
Dosage and Therapeutic Range	3
Side Effects and Toxicity	4
Methods of Determination	5
Statement of the Problem	8
II Materials and Methods	9
Specimens	9
Instrument Specifications	9
Linearity Studies	10
Precision Studies	11
Split Sample Comparison	11
Recovery Studies	12
Comparisons with Assayed Control Substances	12

CHAPTER	Page
III	Results and Discussion 13
	Linearity Studies. 13
	Precision Studies. 13
	Split Sample Comparison Studies 15
	Recovery Studies 16
	Comparisons with Assayed Control Substances. . . 16
	Convenience Factors 16
IV	Conclusion 18
V	Recommendations 20
BIBLIOGRAPHY 33