

EDTA Chelation/Hypertension Study: Clinical Patterns as Judged by the Cornell Medical Index Questionnaire

Hugh D. Riordan, M.D.¹, Emanuel Cheraskin, M.D.², D.M.D.,

Marvin Dirks, B.D., M.A.³, Farhad Tadayon, M.S.M.E.⁴,

Mavis Schultz, A.R.N.P.⁵ and Penny Brizendine, A.R.N.P.⁶

Abstract

Twenty-eight hypertensive patients were clinically evaluated by means of the Cornell Medical Index Health Questionnaire. Following intravenous EDTA therapy, improvement was evident in all systems. Additionally, a case is made for the value of a standardized medical appraisal system in the evaluation of the effectiveness of intravenous EDTA chelation as a therapeutic modality.

Introduction

A review of the recent editions of a number of the classical internal medicine textbooks suggests, as one might expect, that the hypertension syndrome presents with a spectrum of symptomatology, ranging from no clinical signs or symptoms (silent hypertension) to diverse and severe symptomatology and causality. The growing consensus, however, seems to be that even so-called "benign essential hypertension" is neither benign nor essential, but rather the tip of a diagnostic iceberg whose ultimate mass is as yet not seen.^{1 2} The only pathognomonic sign of "early or impending hypertension" is elevated blood pressure.

Early detection of the structural and functional characteristics of a given patient's hypertension symptom matrix could conceivably lead to more effective prevention and treatment. As might be expected,

such early detection frequently requires awareness of more subtle levels of change than we are able to detect with informal annual physical examinations and casual office visits. Headaches, compromised renal function, retinopathy, excessive responsiveness to sympathetic stimulation, and decreased oxygen transport are actually all relatively late symptom correlates of hypertension, for which in turn there must be earlier and even more subtle symptoms correlates.

Comparatively little attention has been accorded to the possibility that *quantification* of the subtle and more general clinical matrix associated with the hypertension syndrome might sharpen diagnostic acuity. The study reported here provided the investigators an unusual opportunity to inventory the signs and symptoms which occur in hypertensive subjects. In addition, it details the changes in that symptomatology, which can be expected from a series of 20 EDTA chelation infusions.

Methodology

The data which follows was generated by an ongoing study on the role of EDTA chelation in the treatment of chronic lead toxicity and hypertension, as reported elsewhere.³ What is unique about the methodology of this paper is the use of the Cornell Medical Index Questionnaire (CMI). In the CMI, people are asked to respond by checking the "Yes" option in response to a symptom description item, if they experience that symptom.

The CMI was originally created to satisfy the need for a device to collect a large body of relevant medical and psychiatric information with a minimum of physician-

1. President

2. Research Consultant

3. Administrative Director of Research

4. Research Associate

5. & 6. Nurse Clinician

Authors are all staff at the Olive W. Garvey Center for the Improvement of Human Functioning Inc., Wichita, K.S 67219.

time input.^{4 5} Over the almost four decades of its existence, this form has been more time-tested than any other history-taking technique.^{6 7 8 9 10} It has been used to study physical and emotional problems, in and out of hospitals and outpatient admitting departments, the relationship of patient complaints to age, sex, race and education, in the military, industry, and sports medicine. To our knowledge this history-taking approach has not been applied to the hypertension problem and has received only limited application to the results of chelation as a therapeutic modality. The questionnaire consists of 195 items arranged in sections (from A-R). In this report we shall be dealing with the total CMI scores and with sections A-L, which quantify the status of signs and symptoms by physical systems.

Results

The total CMI score of the subjects in the study clearly place them in the category of people who were very "significantly" ill at the time the study was begun. Specifically, the overall group mean CMI, total score was 35.7 "yes" responses. According to the inventors of the CMI any total CMI score greater than 25 is indicative of significant illness. As a matter of fact, a review of the data in Table 1 suggests that the total physical systems mean number of "yes" responses alone for the group was 29.1. Parenthetical mention should be made that in the design of the CMI, different systems received different emphasis as judged by the number of questions dedicated to the scale. For the reader's convenience, we have translated the clinical changes following ten and twenty infusions

Table 1
Cornell Medical Index Scale Mean Scores for Physical Systems with Percents of Symptom Improvement Following Ten and Twenty EDTA Chelation Infusions.

System	Number of Items in the Scale	Mean Score Before Treatment	Mean Score Post 10	Pre/Post 10 Percent Symptom Reduction	Mean Score Post 20	Pre/Post 20 Percent Symptom Reduction
Respiratory	18	2.4	1.7	29	1.9	21
Nervous	18	2.8	2.0	29	1.9	32
Digestive	23	4.4	3.4	23	3.5	20
Integumentary	7	1.3	1.0	23	.8	38
Cardiovascular	13	3.9	3.2	18	3.2	18
Musculoskeletal	8	1.3	1.2	8	1.0	30
Genitourinary	11	3.1	3.2	3	2.9	6
Totals	98	29.1	22.5	23	22.3	23

into percentages and have pictorially portrayed them in the figures.

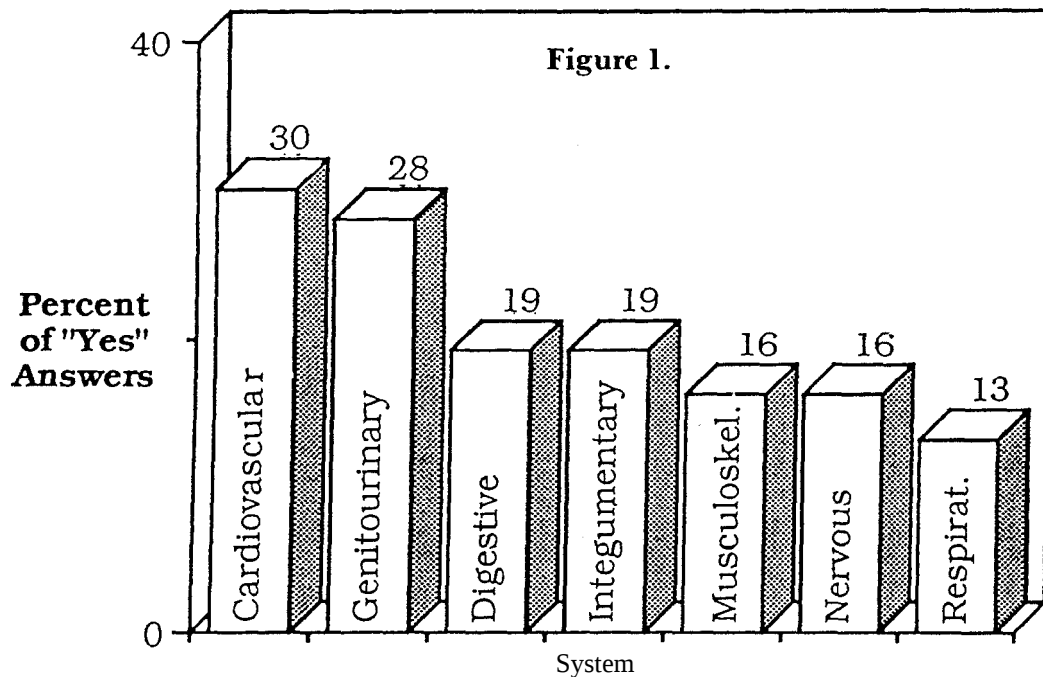
Secondly, the subjects studied were a group for whom the pretreatment cardiovascular scores of the CMI indicated the highest percentage of affirmative answers of any of the systems tested. This is graphically demonstrated in Figure 1 where the data runs from 30% for cardiovascular symptomatology to 13% for respiratory symptomatology. What is perhaps surprising is the degree to which the hypertensive patients are simultaneously experiencing significant symptomatology in other systems.

Thirdly, the group as a whole improved in *all* systems between the beginning of treatment and the tenth chelation ($t = 2.4$, $p = .02$) Statistically significant single-scale improvement occurred in cardiovascular, digestive and nervous systems as indicated by the asterisks (Figure 2). After 20 infusions, subjects continued to maintain their overall improvement when compared with pretreatment levels of symptomatology ($t = 2.7$, $p = .01$). Cardiovascular, nervous, digestive and integumentary systems also still continued to be statistically significantly improved (Figure 3).

Discussion

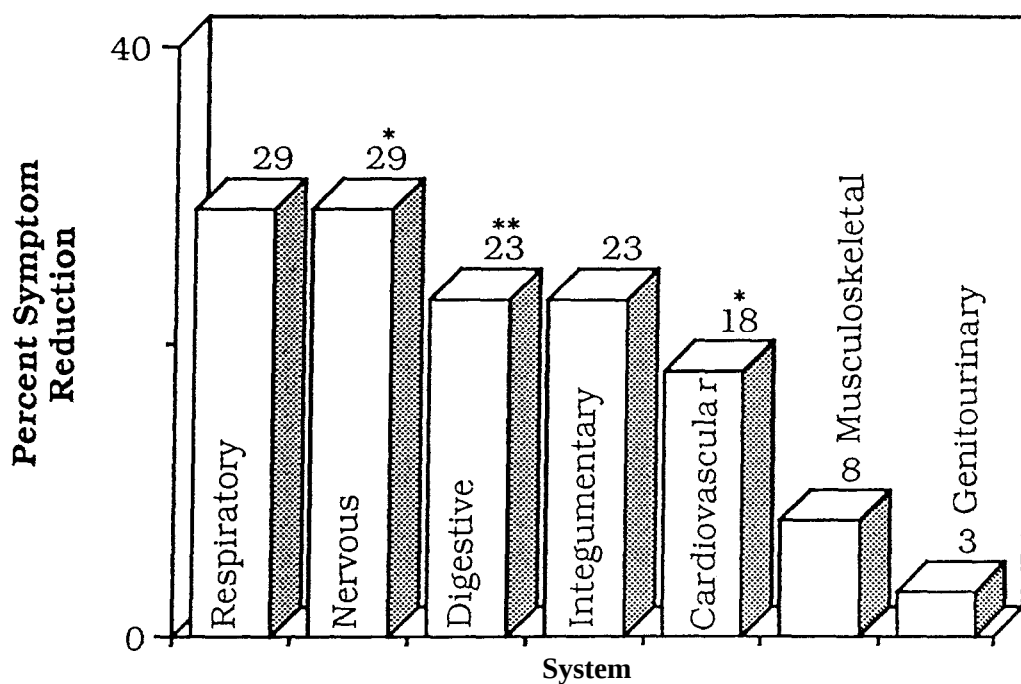
One of the obvious weaknesses of clinical treatment is the frequency with which decisions are made on the basis of informal patient reports of changing symptomatology, namely the anecdotal report. Such a practice is especially troublesome in the early stages of a disease process because of the subtlety of the clinical data. Use of a somewhat more formalized data-gathering instrument, such as the CMI, is potentially an improvement over common practice in that it may help us to identify subtle variations in symptomatology.

The above is obviously a study without a control group. We hope such a weakness is somewhat muted by the fact that the symptom data involved is quantified in a way somewhat more detailed than is usually a part of typical clinical encounter. It is our hope that the innovations contained herein will catalyze interest by others in pursuing research regarding the use of the CMI and/or other formalized clinical questionnaires when doing research on chelation as a treatment for chronic hypertension.



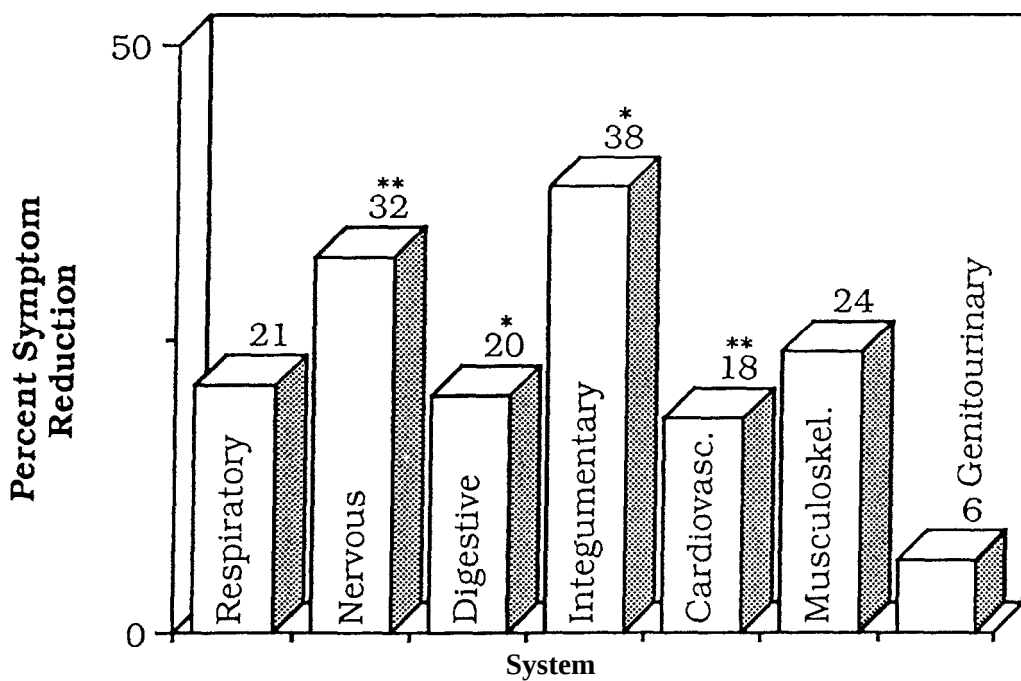
Percentage of patient responses to Cornell Medical Index Health Questionnaire by systems. A "Yes" answer to an item indicates that the patient is experiencing the symptom described.

Figure 2.



Percent of symptom reduction after 10 EDTA infusions in total group (*) = $p = .05$ (**) = $p = (.01)$.

Figure 3.



Percent of symptom reduction after 20 EDTA infusions in total group. (*) = $p = .05$. (**) = $p = .01$.

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References

1. Wyngaarden JB: *Cecil textbook of medicine*. Philadelphia: W.B. Saunders Company, 1985: 256-280.
2. Isselbacher KJ, Adams RD, Braunwald E, Peterdorf RG, Wilson JD: *Harrison's principles of internal medicine*. New York: McGraw-Hill, 1980: 179-181, 1167-1178.
3. Riordan HD, Cheraskin EC, Dirks MJ, Schultz MA, Brizendine PJ: Another look at renal function and the EDTA treatment process. *Orthomolec. Med.*, 1987: 2:3,185-188.
4. Brodman K, Erdmann AJ Jr and Wolff HG: *Manual: Cornell medical index health questionnaire*. New York: Cornell University Medical Center, 1949.
5. Brodman K, Erdmann AJ Jr, Lorge I, Wolff HG: The Cornell medical index: an adjunct to medical interview. *JAMA* 1949: 140; 530.
6. Erdmann AJ Jr, Brodman D, Lorge I and Wolff HG: Cornell medical index health questionnaire. V. Outpatient admitting department of the general hospital. *JAMA* 1952: 149; 550.
7. Brodman K, Erdmann AJ Jr, Lorge I and Wolff HG: Cornell medical index health questionnaire. VI. The relation of patients complaints to age, sex, race, and education. *Gerontol.* 1953: 8; 339.
8. Brodman K, Deutschberger J, Erdmann AJ Jr, Lorge I and Wolff HG: Prediction of adequacy for military service. Use of the Cornell medical index health questionnaire. *U.S. Armed Forces Med. Journ.* 1954: 5; 1802.
9. Erdmann AJ Jr, Brodman K, Deutschberger J and Wolff HG: Health questionnaire used in an industrial medical department. *Indust. Med. Sug.* 1953: 22; 355.
10. Daus AT and Templer DI: The prediction of college football perseverance by the use of the Cornell medical index. *Sports Med. Phys. Fitness.* 1976: 16; 227.