THE INFLUENCE OF EDTA SALTS PLUS MULTIVITAMIN-TRACE MINERAL THERAPY UPON TOTAL SERUM CHOLESTEROL/HIGH-DENSITY LIPOPROTEIN CHOLESTEROL

E. W. McDonagh, C. J. Rudolph, and E. Cheraskin, McDonagh Medical Center, 2800-A Kendallwood Parkway, Gladstone, Missouri 64119, U.S.A.

ABSTRACT

For a number of years, the principal attention was accorded total serum cholesterol as a possible predictor of cardiovascular pathosis. More recently, emphasis has been shifted to the high-density lipoproteins (HDL). Now consideration is turning to the ratio of total serum cholesterol to high-density lipoproteins. In fact, it is now stated that a ratio of 4.5 is the ideal combination in terms of cardiovascular health. This report adds credence to this "ideal" ratio for chronic degenerative disorders.

INTRODUCTION

With the currently recognized epidemic of cardiovascular pathology has come the increasing awareness of a need for more sophisticated diagnostic, therapeutic, and particularly predictive measuring sticks. For a while, serum cholesterol was touted as the popular model. More recently, there has been increasing evidence for the high-density lipoproteins (HDL). Now we are told (1) that the ratio of total serum cholesterol to the high-density lipoproteins (abbreviated CHOL/HDL) is most predictive of heart disease. According to William Castelli, M.D., Director of the Framingham Study, the ratio should be no more than 4.5, regardless of one's age or sex (2).

Quite apart, it is not surprising that a score or more of antihypertensive, hypocholesterolemic, and diuretic agents have been investigated with regard to possible salutory effects upon total serum cholesterol and high-density lipoproteins. As far as we can determine, there is not one published report on the effect of a common chelating agent (EDTA) with supportive multivitamin-trace mineral supplementation upon the ratio of total serum cholesterol and high-density lipoproteins.

Materials and Methods

Accordingly, we looked at this possible relationship with the aid of 358 randomly-chosen patients suffering with chronic degenerative problems (heart disease, maturity-onset diabetes mellitus, etc.) in a

private osteopathic practice environment. Each subject was treated with approximately ten EDTA infusions extending over a period of approximately 50 days. Additionally, each patient was supplied with a supportive full-spectrum multivitamin-trace mineral supplement, the dosages approximately 5 to 10X the RDA (3). The therapy specifics have been detailed elsewhere (4-6).

Results and Discussion

The accompanying table outlines the initial CHOL/HDL groups, the respective sample sizes, the mean ages, the initial mean ratios, the average number of days between the first and second CHOL/HDL readings (actual days of EDTA therapy and supportive supplementation), the second ratio scores, the differences in the ratios, the percentage of the differences, and the statistical significance of the differences of the means (utilizing the student t test (7)).

Table

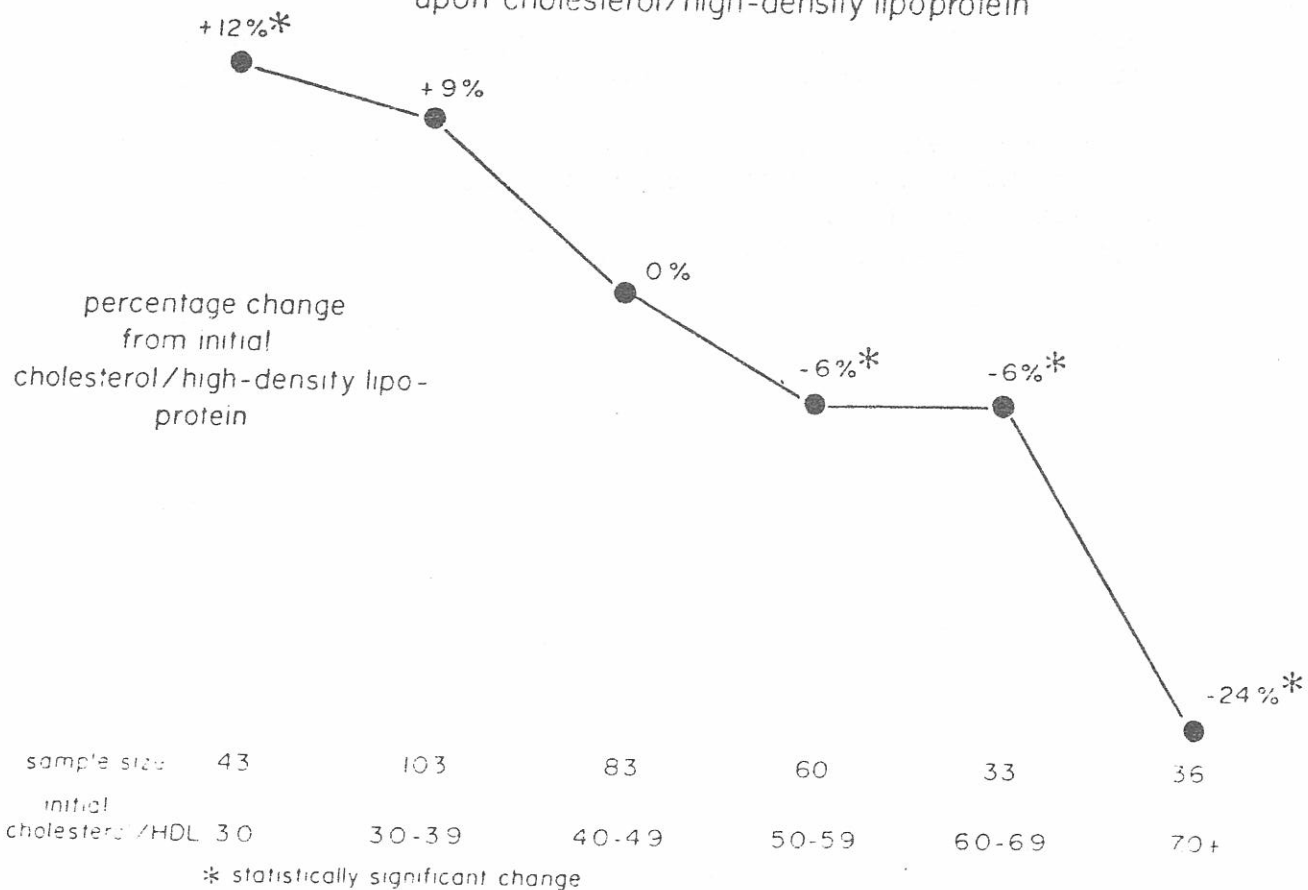### effect of EDTA plus multivitamin-mineral supplementation upon cholesterol/high-density lipoproteins

line	cholesterol/ HDL groups	sample size	mean age	mean initial ratio	mean number of days therapy	mean final ratio	differ- ence	% change	signif- icance of the differ- ence of the means (P)
1	<3.0	43	58	2.5	61	2.8	+0.3	+12	<0.050*
2	3.0-3.9	103	59	3.4	70	3.7	+0.3	+ 9	>0.050
3	4.0-4.9	83	62	4.4	44	4.4	0.0	0	>0.500
4	5.0-5.9	60	60	5.4	45	5.1	-0.3	- 6	<0.005*
5	6.0-6.9	33	61	6.3	39	5.9	-0.4	- 6	<0.050*
6	7.0+	36	57	8.5	27	6.5	-2.0	-24	<0.001*
7	total	358	60	4.7	52	4.5	-0.2	- 4	>0.200

*statistically significant difference of the means

Overall (line 7), there is a statistically insignificant decline (4%) in CHOL/HDL following therapy. However, a more careful analysis of the table indicates that relatively low ratios (under 4.0) tend to rise (lines 1 and 2), relatively high ratios (5.0 and above) tend to decline, and those in a range of 4.0-4.9 (mean 4.4) tend to remain unchanged. Hence, the ratio suggested by Castelli as the "ideal" seems possible, within the limits of this study, with EDTA and supportive therapy (Figure).

Parenthetic mention should be made that other observations made by our group indicate that this same form of treatment seems to lower high

influence of EDTA salts plus multivitamin-trace mineral supplementation upon cholesterol/high-density lipoprotein

+12%*

+9%

0%

-6%*   -6%*

percentage change
from initial
cholesterol/high-density lipo-
protein

-24%*

| sample size | 43 | 103 | 83 | 60 | 33 | 36 |
| initial cholesterol/HDL | 30 | 30-39 | 40-49 | 50-59 | 60-69 | 70+ |

* statistically significant change

total serum cholesterol and elevate low levels (4,5) and effect similar changes with high-density lipoproteins (6). The underlying mechanism for this exciting homeostatic effect remains unclear. It is hoped that our observations will catalyze interest in this area and encourage others to hopefully confirm and enlarge our efforts.

R E F E R E N C E S

1. Rees, ED. Serum Lipid Disorders: What Levels Should You Aim For? Geriatrics 36: 77-86, 1981.

2. Castelli, W. Harvard Medical School Health Letter. November 1979.

3. Food and Nutrition Board. Recommended Dietary Allowances. Ninth Revised Edition. Washington, D.C., National Academy of Sciences. 1980.

4. McDonagh, EW, Rudolph, CJ, and Cheraskin, E. The Effect of Intravenous Disodium Ethylenediaminetetraacetic Acid (EDTA) Upon Blood Cholesterol in a Private Practice Environment. J. Int. Acad. Prevent. Med. 7: 5-12, 1982.

5. McDonagh, EW, Rudolph, CJ, and Cheraskin, E. Serum Cholesterol and the Aging Process. Med. Hypotheses 7: 685-694, 1981.

6. McDonagh, EW, Rudolph, CJ, and Cheraskin, E. The Homeostatic Effect of EDTA with Supportive Multivitamin-Trace Mineral Supplementation Upon High-Density Lipoproteins (HDL). J. Osteopath. Physicians & Surg. Calif. 8: 34, 1982.

7. Li, JCR. Statistical Influence I. Ann Arbor, Edwards Brothers, Inc. 1965.