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3. Klinik und Therapie – Clinique et thérapeutique – Clinic and therapy

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Studies in human and induced Atherosclerosis employing Ethylenediaminetetraacetic acid¹

By **Albert J. Boyle, J. J. Jasper, Herbert McCormick, Mary Kosai, Daisy McCann, and Jesse Goodwin**
Norman E. Clarke, and Robert E. Mosher

Before discussing the use of salts of ethylenediaminetetraacetic acid (EDTA) in the treatment of coronary artery disease I would like to point out a few of the experimental findings in rabbits with induced atherosclerosis made by our group at Wayne State University, Detroit, Michigan. It also would appear pertinent to discuss at some length the philosophy which led to the use of EDTA in atherosclerosis and suggests its further use in several metabolic disorders.

In our early experimental work (1) it was shown that rabbits (Group B) placed on a high cholesterol diet and injected subcutaneously with 500 mg of sodium EDTA every other day developed serum cholesterol levels that were elevated above that of similarly fed control animals designated Group A (Fig. 1). On sacrifice, all test animals, numbering eleven in each group, presented aortic atherosclerotic plaques. One impressive finding was the marked decrease of liver fat and cholesterol in the injected group (Fig. 2) as revealed by inspection and chemical analysis. Serum electrolyte studies in this series of animals showed a depression in serum calcium levels (Fig. 3) though considerably greater in the injected Group B at the midpoint of the experiment which lasted 111 days². Thereafter, however, Group B serum calcium rose to meet the level noted in Group A. Serum magnesium fell initially in both groups and ultimately returned

¹ Financed by Grant-in-Aid from the Michigan Heart Association and Ciba Pharmaceutical Products, Inc.

² From day 48 to 72 no injections of EDTA were given to Group B. During part of this period CaEDTA was fed.