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"ACUTE PHASE LIPIDS" IN SERA OF VARIOUS DISEASES: CHRONIC FATIGUE SYNDROME, CIGUATERA, HEPATITIS, AND VARIOUS CANCER WITH ANTIGENIC EPITOPE RESEMBLING CIGUATOXIN AS DETERMINED WITH MAB-CTX.

Y. Hokama[1], B.K. Shirai[1], C. Whang[1], K.F. Chun[1], N. Higa[1], C. Suma[1], G.A. Uto[1], D. Enlander[2], and A. Cocchetto[2].

[1] *Department of Pathology, University of Hawaii, Honolulu, HI 96822*

[2] *National CFIDS Foundation, Inc. Needham, MA 02492*

Clinical reports and descriptions of Chronic Fatigue Syndrome (CFS) and chronic ciguatera fish poisoning (CCFP) show great similarities in symptomology (1,2). These similarities in the clinical reports suggested the exploration of lipids in sera of CFS, CCFP, as well as other diseases with the Membrane Immunobead Assay (MIA) used for screening ciguateric fish from the ocean. Obviously, other diseases were included in this study for assessing the degree of specificity involved. The results of these immunological examinations are herewith presented.

This procedure for the assessment of lipids was reported previously for the detection of ciguatoxin from fish tissues (3). One ml of sera was treated with 4 ml of absolute acetone, shaken thoroughly and the suspension centrifuged at 1000 rpm for ten minutes at 20 °C. The clear light to dark yellowish acetone supernatant poured into a clean tared 15x100 cm test tube. The acetone phase pervaporated by air jet in the hood for 16-24 hours. The dried sample was then weighed with the analytical balance. Weight/ml of serum was recorded for each sample. The residue was dissolved in 1 ml absolute methanol and tested in the MIA procedure with MAb-CTX. MAB-CTX solution was used to test undiluted, 1:5, 1:10, 1:20, 1:40, 1:80, and 1:160 diluted samples.

A laminated hydrophobic membrane attached to plastic was immersed into the methanol containing the lipids for 10 minutes. The membrane removed and the solvent air dried thoroughly. Then the membrane was immersed into an aqueous suspension of latex blue colored micro-beads (0.400 in diameter) coated with MAb-CTX for 10 minutes. The membrane was removed and the color intensity scored. Titration was carried out by immersion of the membrane into diluted solutions of the methanol lipid solutions. The monoclonal antibody to purified ciguatoxin was prepared in 1987 and freezing and culture have maintained the hybridoma.

The MIA results of the acetone lipid fraction of CFS (26 samples) and normal individuals (33 samples) showed significant differences with the MAB-CTX with one exception (1:10 titre). All

CFS samples gave titre of 1:20 with the majority of titres from 1:40-1:160 (24 samples). In contrast, the normal sera lipid showed 2 samples with a 1:10 titre, 15 with 1:5 titre, and 16 with no titre. The cancer and other disease lipid fraction titres in the MIA with MAb-CTX were 1:10 (3 samples), 1:20 (10 samples) and 1:40 (5 samples). The smaller sera samples (8) from hepatitis sera showed titres comparable to CFS with 1:40 (3 samples) and 1:80 (5 samples). Likewise 4 samples of ciguatera fish poisoning sera had titres of 1:40 (3 samples) and 1:80 (1 sample).

It is concluded that disease conditions and environmental exposure to deleterious factors (toxins0 triggers the release of lipids (probably from liver) with similar epitopes to ciguatoxin that reacts with the MAb-CTX. We wish to designate these lipids as "acute phase lipids"-comparable to "acute phase proteins" in diseases.

References:

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