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# LRA by ELISA/ACT®

## CLINICAL PEARLS UPDATE#38

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### *Chronic Fatigue*

September 24, 2004

Dear Colleague,

Chronic fatigue syndrome / chronic fatigue immune dysfunction syndrome (CFIDS) is a systemic energetic dysfunction classically characterized as having more than six months of unexplainable fatigue. Knowing an individual's reactive immune burden of delayed hypersensitivities / delayed allergies opens new clinical and therapeutic possibilities in CFIDS. Functional lymphocyte response assays are the clinical 'gold standard' for measuring delayed hypersensitivity reactions. With LRA by ELISA/ACT® tests and plans, an even larger number of items can be tested in a shorter time and with greater precision. This improves outcomes and, with your inspiration and encouragement to comply along with our nutrition and program counseling staff, as an extension of your office, can achieve consistently outstanding results. We are grateful for the opportunity to serve. The studies by Chaney, Lapp, Choppa and Vojdani are supportive of our research combining comprehensive, *ex vivo* functional delayed allergy detection by lymphocyte response with specific Alkaline Way diet, targeted supplementation, and healing actions as a first line comprehensive care plan to reset the body to healthy tolerance, homeostasis, energetic resilience and sustained remission.

We encourage you to share this valuable clinical update newsletter with your colleagues and staff so they can learn more about how our comprehensive approach can be applied to their practice with beneficial results. Please also let us know if any of your colleagues or staff would like to be added to our email distribution list. We are grateful for the opportunities to be of service to you and your patients.

Sincerely,

***Russ Jaffe, MD, Ph.D., CCN, NACB***  
***Lab Director***

*J Clin Lab Immunol.* 1998;50(1):1-16.

**Downregulation of RNase L inhibitor correlates with upregulation of interferon-induced proteins (2-5A synthetase and RNase L) in patients with chronic fatigue immune dysfunction syndrome.**

**Vojdani A, Choppa PC, Lapp CW.  
Immunosciences Lab., Inc., Beverly Hills, CA 90211, USA.**

Chronic Fatigue Immune Dysfunction Syndrome (CFIDS) is a disorder characterized by debilitating fatigue associated with immunological abnormalities and cognitive impairments. The recently cloned RNase L Inhibitor (RLI) gene encodes a specific protein that is believed to regulate 2-5A synthetase and RNase L activity via the formation of a latent heterodimeric protein complex. In the present study, we investigated the levels of 2-5A synthetase, RNase L and RLI in patients with CFIDS as compared to healthy controls. Quantitative Competitive PCR (Q/C PCR) analysis showed a statistically significant decrease in RLI mRNA present in the peripheral blood lymphocytes (PBL) of patients with CFIDS (n = 25, mean = 569, S.E = 154) as compared to RLI mRNA level present in peripheral blood lymphocytes (PBL) of healthy controls (n = 15, mean = 2296, S.E = 506; p < 0.0001). The decrease in RLI mRNA in CFIDS individuals correlated directly with RLI and RLI:RNase L protein ratio while showing an inverse relationship to the 2-5A synthetase and RNase L activity. This RLI mRNA and protein deficiency in CFIDS patients may explain the increase in activity of RNase L found in CFIDS patients. The unidirectional decrease in RLI message and protein levels in CFIDS individuals may contribute to the destabilization of the latent RLI:RNase L heterodimeric protein complex, resulting in the excessive activation of RNase L shown in this study. The increased activation of RNase L may result in an increased cellular RNA turnover and subsequent inhibition of protein synthesis; thus resulting in general fatigue, myalgia muscle weakness and other symptomatology shown in CFIDS patients. Furthermore, this data supports the hypothesis that the antiviral 2-5 oligoadenylate synthetase (2-5OAS) overexpression in individuals with CFIDS correlates with an increase in RNase L activity and with a decrease in RNase L inhibitor.

*Clin Infect Dis.* 1994 Jan;18 Suppl 1:S157-9.

**Decreased natural killer cell activity is associated with severity of chronic fatigue immune dysfunction syndrome.**

**Ojo-Amaize EA, Conley EJ, Peter JB.  
Specialty Laboratories, Incorporated, Santa Monica, California 90404.**

Natural killer (NK) cell activity was measured blindly in vitro with blood specimens from 50 healthy individuals and 20 patients with clinically defined chronic fatigue immune dysfunction syndrome (CFIDS) who met the criteria established by the Centers for Disease Control and Prevention (Atlanta). In accordance with a group scoring system of 1-10 points, with 10 being the most severe clinical status, the patient population was stratified into three clinical groups: A (> 7 points), B (5-7 points), and C (< 5 points). NK cell activity was assessed by the number of lytic units (LU), which for the 50 healthy controls varied between 20 and

250 (50%, 20-50 LU; 32%, 51-100 LU; 6%, 101-130 LU; and 12%, > 150 LU). In none of the 20 patients with CFIDS was the NK cell activity > 100 LU. For group C, the 10 patients stratified as having the least severe clinical condition, the measure was 61.0 +/- 21.7 LU; for group B (more severe, n = 7), it was 18.3 +/- 7.3 LU; and for group A (most severe, n = 3), it was 8.0 +/- 5.3 LU. These data suggest a correlation between low levels of NK cell activity and severity of CFIDS, which, if it is confirmed by additional studies of larger groups, might be useful for subgrouping patients and monitoring therapy and/or the progression of CFIDS.