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Poster Presentations:

Epidemiology (Abstract Nos. 128-145)
Rheumatology 2003 42: 60-66. [PDF]

RA treatment: Anti-TNF agents (Abstract Nos. 213-232)
Rheumatology 2003 42: 86-92. [PDF]

134. CORRELATION OF TWO-MINUTE HEART RATE VARIABILITY ANALYSIS, BECK ANXIETY INDEX, AND MODIFIED HEALTH ASSESSMENT QUESTIONNAIRE (MDHAQ) WITH FIBROMYALGIA TENDERNESS SCORE

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Background: Autonomic dysregulation may be an important feature of Fibromyalgia (FM) leading to novel interventional approaches. Heart Rate Variability (HRV) uses mathematical calculations of R-R interval changes during the normal respiratory cycle of sinus arrhythmia, which is an indirect measure of central, basal autonomic tone. Established and validated for high level athletic training and cardiovascular disease research, its application for FM is developing. Twenty-four hour monitoring has demonstrated autonomic dysregulatory features in FM, but its clinical use is combersome. A new, twominute HRV technique developed and validated for athletes (OmegaWave, Inc., Eugene, Oregon, USA) was evaluated as a more convenient method to assess autonomic status in patients with FM.

BAI		MDHAQ(VAS)		HRV	
Total	0.495**	Function	0.626**	Vagus	-0.172#
Panic	0.493**	Psych	0.467**	Sympathetic	0.312*
Subjective	0.350*	Pain	0.570**	Tension Index	0.376**
Neuro	0.388*	Stiffness	0.531**	Total Power	-0.243
Autonomic	0.252#	Fatigue	0.425**		
		Global	0.684**		

*p < 0.05 **p < 0.001 # NS

Methods: With OmegeWave HRV, 52 consecutive patients with chronic FM (41 F, 11 M, mean weight 184.5 lbs, mean age 48.8, FM duration 8.9 yrs., mean FM meds used 6.5) were evaluated at a private, suburban, referral based rheumatology clinic. Co-morbidities included: degenerative spine pain 58%, anxiety 21%, depression 21%, and bipolar disorder 10%. Medications used included: benzodiazepines 33%, PM antidepressant 39%, dialy narcotics 35%, dopamine agonist 25%, SSRI 23%, antipsychotic 12%, NSAID 33%, and antiepileptic 21%. HRV data was compared to tenderness score, MDHAQ and Beck Anxiety Index (BAI) at one assessment. Tenderness score (0-54) was the sum of 18 classic tender points, each scored by severity (0=painless, 1/2=minimal, 1=4kg pressure, 2=severe, 3=exquisite.) Mean Pain Score was 18.0 despite current treatment. Results are Pearson correlation with tender point score.

Results:

Conclusions: In such a challenging field of research, these non-invasive assessment tools, including HRV, may be helpful evaluating FM activity and treatment responses.

226. ETANERCEPT AS EFFECTIVE MONO-THERAPY FOR RHEUMATOID ARTHRITIS: CORRELATION WITH MEASURES OF AUTONOMIC NERVOUS SYSTEM ACTIVITY

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Background: Despite the dramatic advance of anti-TNF therapy for rheumatoid arthritis (RA), only a portion of patients taking etanercept as monotherapy achieve excellent control. To date, no specific feature has distinguished this most responsive group or predicted who responds to etanercept alone and who requires an etanercept/DMARD combination for effective control of synovitis. Recent interest in how autonomic central nervous system activity and dysomnia influences etanercept efficacy (EULAR 2002) has sparked interest in whether measures of autonomic activity, such as heart rate variability, may correlate with effective use of etanercept as monotherapy in RA.

Methods: MDHAQ and basal autonomic nervous system activity measured with Heart RateVariability (HRV) and Beck Anxiety Index (BAI) were assessed in 31 consecutive patients (11M, 20F) with established RA (11.6 yrs) under excellent control (<4 tender joints). All patients were using etanercept >6 mos. (mean 22 mo) in a private, suburban rheumatology clinic. Patients with co-morbid fibromyalgia were excluded. Twelve required DMARD and/or prednisone with etanercept, 19 required etanercept alone. All had participated in aggressive attempts to minimze DMARD and steroid use after adding etanercept. Demographics in each group were not statistically different (age, RA duration, RF positivity, ANA positivity, ESR, Hematocrit, CRP, duration of etanercept use, weight) by Pearson Correlation and did not predict successful use of etanercept as monotherapy. Only tender joint count

Multi-Dimensional Health Assessment Questionnaire (MDHAQ)

	Etanercept monotherapy	Etanercept/DMARD combination	Pearson correlation
Function	0.54	2.88	0.627**
Psychiatric	1.17	4.68	0.681**
VAS Pain	0.83	4.52	0.701**
Stiffness (min.)	5.0	51.5	0.591**
VAS Fatigue	1.24	5.53	0.714**
VAS Global	1.41	4.20	0.563**

*p < 0.05, **p < 0.001

Beck Anxiety Index and Heart Rate Variability

Beck Anxiety Index	Etanercept monotherapy	Etanercept/DMARD combination	Pearson correlation
Total score	3.68	12.5	0.55**
Autonomic sub-score	1.16	3.17	0.423*
Heart rate variability	0.17	0.12	-0.409*
Vagus			
Sympathetic	51	65	0.410*
Tension Index	217.8	490.9	0.506*
Total Power	516.1	351.8	NS

*p < 0.05, **p < 0.001

was silghtly, but statistically different in the monotherapy group (0.21±0.63) compared to the etanercept/DMARD (2.5±2.7) combination group.

Results are presented in the tables.

Conclusions: No parameter correlated with successful etanercept monotherapy except MDHAQ, BAI and HRV. Whether controlling sympathetic activity enhances etanercept efficacy or decreases autoimmune disease activity, identifying and addressing this issue may improve patient care and decrease adverse events from continued use of combination therapy.