

Fibromialgia

Questa sindrome è difficilmente diagnosticata. I sintomi talvolta non tutti presenti contemporaneamente vengono interpretati dai medici come disturbi primari o secondari ad altre patologie e non concorrono alla diagnosi complessiva. Dagli Psicologi e Psicoterapeuti spesso non viene neanche presa in considerazione l'opportunità di indagare su alcuni sintomi somatici riportati dai pazienti. In realtà secondo me si può fare una diagnosi "probabile" ma non di più. Infatti l'insieme di sintomi che comporta si ritrovano a gruppi o sparsi. D'altra parte il punto essenziale è che i tali disturbi sono quasi tutti mediati dal SNA e quindi la cura a base di "terapia della frequenza risonante" funziona comunque, sia che diagnostichiamo FM sia che non ce la sentiamo di farlo. A me è capitato un caso "probabile" e ho sperimentato un training secondo un sistema combinato a base di "terapia della frequenza risonante" e neurofeedback. Ha funzionato molto bene e vorrei fare un accenno sul libro. Vista la prevalenza (che ti riporto più sotto), credo che sarà una di quelle attività terapeutiche e divulgative importanti della nostra Associazione. Ti voglio far conoscere alcune informazioni generali e soprattutto la letteratura di base. Ci servirà.

Una malattia reumatica che colpisce i muscoli causando un aumento di tensione muscolare i muscoli tesi sono causa di dolore che in alcuni casi è localizzato (le sedi più frequenti sono il collo, le spalle, la schiena, le gambe), provocano rigidità e possono limitare i movimenti o dare una sensazione di gonfiore a livello delle articolazioni, i muscoli tesi è come se lavorassero costantemente per cui sono sempre stanchi e si esauriscono con grande facilità: questo significa che chi è affetto da Fibromialgia si sente sempre stanco e si affatica anche per minimi sforzi, non riposa in modo adeguato, ha un sonno molto leggero, si sveglia più volte durante la notte ed alla mattina. E' una malattia a genesi multifattoriale. Gli studi volti a capire le cause della malattia hanno documentato numerose alterazioni dei neurotrasmettitori a livello del sistema nervoso centrale. Tipica è la **disfunzionalità del Sistema Nervoso Autonomo** e l'andamento dei sintomi varia in rapporto a numerosi fattori esterni che sono in grado di provocarne un peggioramento: c'è una evidente influenza dei **fattori climatici** (i dolori peggiorano nelle stagioni "di passaggio", cioè primavera e autunno e nei periodi di grande umidità), dei **fattori ormonali** (peggioramento nel periodo premenstruale, peggioramento in caso di disfunzioni della tiroide), dei **fattori stressanti** (discussioni, litigi, tensioni sul lavoro e in famiglia). I più recenti studi epidemiologici sulla FM evidenziano una frequenza nella popolazione generale compresa fra il 3 e il 4 %, che aumenta progressivamente con l'età e nel sesso femminile fino a raggiungere l'8-9 %. Un recente studio europeo ha valutato la prevalenza "possibile" (ricavata mediante interviste telefoniche e rapporti matematici) della FM nella popolazione generale in Francia e Portogallo, paesi molto simili all'Italia, risultata del 7,4 e del 10,4 % rispettivamente. In mancanza di dati ufficiali, **è quindi verosimile immaginare in Italia una prevalenza nella popolazione generale intorno al 8-9 % (che significa oltre 4.000.000 di individui affetti !!!)**. Ecco i principali disturbi. Rigidità: sensazione di rigidità generalizzata oppure localizzata al dorso o a livello lombare, soprattutto al risveglio, ma anche se si resta per qualche tempo fermi nella stessa posizione (seduti o in piedi). Disturbi del sonno: più che difficoltà ad addormentarsi si tratta di frequenti risvegli notturni e sonno non ristoratore. Viene considerata specifica della FM la cosiddetta "anomalia alfa-delta": non appena viene raggiunto il sonno "profondo" (caratterizzato da onde delta all'elettroencefalogramma) si ha un brusco ritorno verso il sonno "superficiale" (caratterizzato da onde alfa). La mancanza di sonno profondo, fase nella quale i muscoli si rilassano e recuperano la stanchezza accumulata durante il giorno, spiega molti dei sintomi della FM (stanchezza persistente, risvegli notturni, sonno non ristoratore). Mal di

testa o dolore al volto: il mal di testa si caratterizza come cefalea nucale, temporale o sovraorbitaria oppure emicrania, molto spesso ad andamento cronico (cioè il paziente riferisce di soffrire di mal di testa da sempre). Frequentemente i pazienti con FM presentano dolore a livello mascellare o mandibolare e in questi casi la sintomatologia viene confusa con una artrosi. Disturbi della sensibilità: in particolare formicolii, diffusi su tutto il corpo oppure limitati ad un emisoma o ai soli arti. Inoltre diminuzione della sensibilità, senso di intorpidimento o di "addormentamento" con la stessa distribuzione. Disturbi gastrointestinali: difficoltà digestive, acidità gastrica, dolori addominali spesso in relazione ai cambiamenti climatici o a fattori stressanti, e quindi classificate come "gastrite da stress". Nel 60% dei pazienti con FM si associa una sindrome del colon irritabile (la cosiddetta "colite spastica"): alternanza di stipsi e diarrea con dolori addominali e meteorismo. Disturbi urinari: caratteristica della FM è una aumentata frequenza dello stimolo ad urinare o una vera e propria urgenza minzionale in assenza di infezione delle urine. Più raramente si può sviluppare una condizione cronica con dolore a livello vescicale, definita "cistite interstiziale". Dismenorrea: molte delle dismenorree di notevole entità e scarsamente responsive alla terapia sono giustificate da una FM non diagnosticata. Anche il vaginismo (dolore durante il rapporto sessuale) è caratteristico della FM. Alterazioni della temperatura corporea: alcuni pazienti riferiscono sensazioni anomale (non condivise dalle altre persone che stanno intorno a loro) di freddo o caldo intenso diffuso a tutto il corpo o agli arti. Non è rara una eccessiva sensibilità al freddo delle mani e dei piedi, con cambiamento di colore delle dita che possono diventare inizialmente pallide e quindi scure, cianotiche: tale condizione è nota come fenomeno di Raynaud. Alterazioni dell'equilibrio: senso di instabilità, di sbandamento, vere e proprie vertigini spesso ad andamento cronico e che vengono erroneamente imputate all'artrosi cervicale o a problemi dell'orecchio. Poiché la FM coinvolge anche i muscoli oculari e pupillari i pazienti possono presentare nausea e visione sfuocata quando leggono o guidano l'automobile. Disturbi cognitivi: difficoltà a concentrarsi sul lavoro o nello studio, "testa confusa", perdita di memoria a breve termine (in inglese tali manifestazioni vengono definite "fibro-fog", cioè annebbiamento fibromialgico). Sintomi a carico degli arti inferiori: sono rappresentati più spesso da crampi e meno frequentemente da movimenti incontrollati delle gambe che si manifestano soprattutto di notte ("Sindrome delle gambe senza riposo").

Alcuni studi che formano la letteratura base per l'applicazione della nostra "terapia della frequenza risonante" e del neurofeedback:

AUTONOMIC DYSFUNCTION IN PATIENTS WITH FIBROMYALGIA: APPLICATION OF POWER SPECTRAL ANALYSIS OF HEART RATE VARIABILITY.

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Source: Seminars Arthritis Rheumatism 2000; 29(4):217-9.

Objectives: To assess the interaction between the sympathetic and parasympathetic systems in patients with fibromyalgia syndrome (FM), using power spectrum analysis (PSA) of heart rate variability (HRV). In addition, we explored the association between HRV, measures of tenderness, FM symptoms, physical function, psychological well being and quality of life.

Methods: We studied 22 women with FM and 22 age-matched healthy women. Twenty-minute electrocardiogram recordings were obtained in a supine position during complete rest. Spectral analysis of R-R intervals was done by the fast-Fourier transform algorithm.

Results: Heart rate was significantly higher in FM patients compared with controls ($P < 0.006$). FM patients had significantly lower HRV compared with controls ($P = 0.001$), and higher low-frequency (LF) and lower high-frequency (HF) components of PSA than controls ($P < 0.001$). Quality of life, physical function, anxiety, depression, and perceived stress were moderately to highly correlated with LF, HF (in normalized units) and LF/HF. No association was observed between HRV parameters and measures of tenderness and FM

symptoms.

Conclusions: The basal autonomic state of patients with FM is characterized by increased sympathetic and decreased parasympathetic tones. Autonomic dysregulation may have implications regarding the symptomatology, physical and psychological aspects of health status.

Abnormal Sympathovagal Balance in Men with Fibromyalgia.

Hagit Cohen, Lily Neumann, Ali Alhosshle, Moshe Kotler, Mahmoud Abu-Shakra, and Dan Buskila

Source: J Rheumatology 2001; 28(3):581-9.

Objective: It is possible that there are differences in clinical manifestations between men and women with fibromyalgia syndrome (FM), especially in autonomic dysfunction; we assessed the interaction between the sympathetic and parasympathetic systems in postural change in men with FM using power spectral analysis (PSA) of heart rate variability (HRV), and investigated the pathogenesis of the orthostatic intolerance.

Methods: We studied 19 men with FM and 19 controls matched for age and sex. A high resolution electrocardiogram was obtained in supine and standing postures during complete rest. Spectral analysis of R-R intervals was done by the fast Fourier transform algorithm.

Results: PSA of HRV revealed that men with FM at rest are characterized by sympathetic hyperactivity and concomitantly reduced parasympathetic activity. During postural changes, male patients demonstrated an abnormal sympathovagal response. These results provide the physiological basis for the orthostatic intolerance in men with FM.

Conclusion: This report of autonomic dysfunction in men with FM revealed an abnormal autonomic response to orthostatic stress. This abnormality may have implications regarding the symptoms of FM.

A Case-Control Study of Heart Rate Variability in Persons with Fibromyalgia Compared to Sedentary Controls.

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Source: Arthritis & Rheumatism 2001; 44(9, suppl S66):83.

Statement of purpose: This study was conducted to compare, using a case-control design, heart rate variability (HRV) in subjects with Fibromyalgia (FM) compared with sedentary healthy control (C) subjects. Using sedentary controls eliminated the potential confounder of deconditioning in studies of autonomic nervous system disruption in FM.

Methods, materials, and analytical procedures used: 31 FM subjects and 32 C subjects were matched for age and sex. ECG data for each subject were collected with a Holter monitor over a 24-period under controlled conditions. From these data, HRV parameters in the spatial and frequency domains were computed for five minute intervals and then averaged over daytime, nighttime, and 24 hour periods. Measurements of normal interval time between sequential QRS complexes (NN) were extracted from ECG data to create a time domain representation of HRV. Parameters in the time domain included the average NN interval (AVNN), and the standard deviation of the NN interval (SDNN). The NN interval distributions were transformed into the frequency domain and measures of power in the low frequency (LF) domain (0.04 Hz-0.15 Hz) and in the high frequency domain (HF) domain (0.15 Hz-0.4 Hz) computed. These data were both log transformed and normalized to total power (TP). The LF/HF power ratio was calculated as an approximate measure of sympatho-vagal balance.

Results: Compared to C subjects, FM subjects had significantly lower 24 hour averaged AVNN (739±77 msec (SD) vs. 789±100 msec, p=0.032) and SDNN (108±28 msec vs. 138±46 msec, p=0.003). Similar results were found when comparing 24 hour averaged HRV measures in the frequency domain. In particular LF/HF was significantly higher in FM compared to C (5.41±2.92 vs. 3.86 ±1.80, p=0.015). When comparing daytime to nighttime averages of HRV parameters, both groups of subjects increased HRV at night and decreased LF/HF.

Conclusions: The differences in HRV in time and frequency domains between FM and C suggest that overall HRV and cardiac sympatho-vagal balance is altered in FM compared to C, possibly representing reduced cardiac vagal input or an altered baroreflex response.

Is Fibromyalgia a generalized reflex sympathetic dystrophy?

Manuel Martinez-Lavin, MD. Chief, Rheumatology Department. Instituto Nacional de Cardiologia Ignacio Chavez, Juan Badiano

Source: Clin Exp Rheumatology 2001; 19:1-3.

Objective: Fibromyalgia and reflex sympathetic dystrophy share defining characteristics, namely chronic pain and allodynia, as well as other important clinical features such as onset after trauma, female predominance, paresthesias, vasomotor instability; response to sympathetic blockade and anxiety/depression. Recent research using heart rate variability analysis demonstrated that patients with fibromyalgia have changes consistent with relentless circadian sympathetic hyperactivity:

I purpose that fibromyalgia is a sympathetically maintained pain syndrome in which ongoing sympathetic hyperactivity sensitises the primary nociceptors and induces widespread pain and allodynia.

Cognitive Function in Fibromyalgia Patients.

Denise C. Park, Jennifer M. Glass, Meredith Minear, and Leslie J. Crofford

Source: Arthritis & Rheumatism 2001; 44(9):2125-2133.

Objective: To evaluate fibromyalgia (FM) patients for the presence of cognitive deficits and to test the hypothesis that abnormalities would fit a model of cognitive aging.

Methods: We studied 3 groups of patients: FM patients without concomitant depression and in the absence of medications known to affect cognitive function (n=23), age- and education-matched controls (n=23), and education-matched older controls who were individually matched to be 20 years older (± 3 years) than the FM patients (n=22). We measured speed of information processing, working memory function, free recall, recognition memory, verbal fluency, and vocabulary. We correlated performance on cognitive tasks with FM symptoms, including depression, anxiety, pain, and fatigue. We also determined if memory complaints were correlated with cognitive performance.

Results: As expected, older controls performed more poorly than younger controls on speed of processing, working memory, free recall, and verbal fluency. FM patients performed more poorly than age-matched controls on all measures, with the exception of processing speed. FM patients performed much like older controls, except that they showed better speed of processing and poorer vocabulary. Impaired cognitive performance in FM patients correlated with pain complaints, but not with depressive or anxiety symptoms. FM patients reported more memory problems than did the older and younger controls, and these complaints correlated with poor cognitive performance.

Conclusion: Cognitive impairment in FM patients, particularly memory and vocabulary deficits, are documented in this study. Nevertheless, the intact performance on measures of information processing speed suggests that the cognitive deficits are not global. FM patients' complaints about their memory are likely to be legitimate, since their memory function is not age appropriate.

Treatment of Fibromyalgia Incorporating EEG-Driven Stimulation: A Clinical Outcomes Study.

Horst H. Mueller, C.C. Stuart Donaldson, David V. Nelson, Mellisa Layman

Source: J Clinical Psychology 2001; 57(7):933-952.

Objective: Thirty patients from a private clinical practice who met the 1990 American College of Rheumatology criteria for fibromyalgia syndrome (FS) were followed prospectively through a brainwave-based intervention known as electroencephalograph (EEG)-driven stimulation or EDS. Patients were initially treated with EDS until they reported noticeable improvements in mental clarity, mood, and sleep. Self-reported pain, then, having changed from vaguely diffuse to more specifically localized, was treated with very modest amounts of physically oriented therapies. Pre- to post treatment and extended follow-up comparisons of psychological and physical functioning indices, specific SF symptom ratings, and EEG activity revealed statistically significant improvements. EDS appeared to be the prime initiator of therapeutic efficacy. Future research is justified for controlled trials and to better understand disease mechanisms.

Circadian studies of autonomic nervous balance in patients with fibromyalgia: a heart rate variability analysis.

Martinez-Lavin M, Hermosillo AG, Rosas M, Soto ME. Instituto Nacional de Cardiologia Ignacio Chavez, Mexico City, Mexico.

Source: Arthritis & Rheumatism 1998; 41(11):1966-71.

Objective: To determine the accumulated 24-hour cardiovascular autonomic modulation and its circadian variations in patients with fibromyalgia, by means of heart rate variability analysis.

Methods: Thirty patients with fibromyalgia and 30 age- and sex-matched controls were studied prospectively. Assessments included a 24-hour ambulatory recording of heart rate variability, time-domain analysis of the accumulated 24-hour R-R interval variations, and power spectral analysis to determine the sympatho/vagal balance at different hours (calculated as the power spectral density of the low-frequency [0.04-0.15-Hz] sympathetic band divided by the power of the high-frequency [0.15-0.15-Hz] parasympathetic band).

Results: Fibromyalgia patients had diminished accumulated 24-hour heart rate variability, manifested by a decreased standard deviation of all R-R intervals (mean +/-SD 126 +/- 35 ms, versus 150 +/-33 ms in controls; P=0.008) and a decreased ratio of pairs of adjacent R-R intervals differing by >50 ms (mean +/- SD 12.0 +/- 9.0% versus 20.1 +/- 18.0%; P=0.031). Patients lost the circadian variations of sympatho/vagal balance, with nocturnal values significantly higher than those of controls at time 0 (mean +/- SD 3.5 +/- 3.2 versus 1.2 +/- 1.0; P=0.027) and at 3 hours (3.3 +/- 3.0 versus 1.6 +/- 1.4; P=0.01).

Conclusion: Individuals with fibromyalgia have diminished 24-hour heart rate variability due to an increased nocturnal predominance of the low-frequency band oscillations consistent with an exaggerated sympathetic modulation of the sinus node. This abnormal chronobiology could explain the sleep disturbances and fatigue that occur in this syndrome. Spectral analysis of heart rate variability may be a useful test to identify fibromyalgia patients who have dysautonomia.

Studies of Neurofeedback

A study of neurofeedback on treating EEG slowing in fibromyalgia was published in 1998. (Canadian Journal of Clinical Medicine, June 1998). An NIH-funded study of neurofeedback treatment for mild/moderate brain injury appears in the June 2001 issue of the Journal of Head Trauma Rehabilitation. Co-principal investigators are Dr. Nancy Schoenberger, of the Kessler Rehabilitation Institute, West Orange, NJ and Dr. Mary Lee Esty of the Neurotherapy Center of Washington, Chevy Chase, MD. Dr. Len Ochs, developer of the treatment, was consultant to the study. Results of this study have been presented at numerous professional conferences, including the New York Academy of Traumatic Brain Injury, the 26th Annual Williamsburg Traumatic Brain Injury Rehabilitation Conference, The Brain Injury Association of Maryland's Annual Conference, the Association of Applied Psychophysiology and Biofeedback, the Biofeedback Society of DC, Maryland and Virginia, the Brain Injury Association of Northern Virginia, the First Federally-Funded Interagency Conference on Brain Injury, Bethesda, MD, and the Brain Injury Association of Texas.

A double-blind, placebo-controlled study of the effects of neurofeedback stimulation on EEG slowing associated with fibromyalgia was done at the NCW in Chevy Chase, and at Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL. Data are being processed. We are finding a virtual remission of fibromyalgia symptoms (pain, energy, cognitive, mood, balance-coordination problems) in over 70% of people who complete treatment that combines stimulation neurofeedback with correction of muscle imbalances using surface EMG and myofascial/craniosacral therapy. The Dana Foundation included coverage of Neurofeedback-TBI work on National Public Television. Several studies demonstrate the effects of EEG stimulation on fibromyalgia. The Neurotherapy Center of Washington treatment protocol includes the treatment elements included in the Mueller and Donaldson articles described here.

The Donaldson series (2001) on neural plasticity and fibromyalgia demonstrates the link between CNS dysfunction and the ability of the brain to change (neural plasticity), and it discusses what that means in terms of practical applications for successful treatment for fibromyalgia. In addition. [Donaldson CCS, Sella GE, Mueller HH: The Neural Plasticity Model of Fibromyalgia, Theory Assessment and Treatment. Part I, II & III. Practical Pain Management 2001; May/June. (12-17), July/Aug, (18-25), and Sept/Oct., (25-31)] Mueller (2001) presents treatment outcomes showing the promise of currently available brain stimulation technology for fibromyalgia. (Mueller H, Donaldson CC, Nelson D, and Layman M: Treatment of Fibromyalgia Incorporating EEG-Driven Stimulation: A Clinical Outcomes Study. J Clinical Psychology 2001; 57(7), 933-952.)