

Letter

Fibromyalgia and sleep-disordered breathing: the missing link

Denis Martinez and Cristiane Maria Cassol

Division of Cardiology, Hospital de Clínicas de Porto Alegre, Universidade Federal do Rio Grande do Sul, Rua Ramiro Barcelos, 2350 - Porto Alegre, RS - Brazil - 90035-903

Corresponding author: Cristiane Maria Cassol, ccassol@hcpa.ufrgs.br

Published: 25 November 2008

This article is online at <http://arthritis-research.com/content/10/6/408>

© 2008 BioMed Central Ltd

Arthritis Research & Therapy 2008, **10**:408 (doi:10.1186/ar2538)

See related review articles by Martinez-Lavin, <http://arthritis-research.com/content/9/4/216>, and Staud, <http://arthritis-research.com/content/8/3/208>, related research article by Vargas-Alarcón, <http://arthritis-research.com/content/9/5/R110>, related editorial by Eisinger, <http://arthritis-research.com/content/9/4/105>, related letter by Felix and Fontenele, <http://arthritis-research.com/content/9/5/404>, and related response by Eisinger, <http://arthritis-research.com/content/10/6/409>

Recently, Martinez-Lavin [1] proposed a model of sympathetically maintained neuropathic pain syndrome that has the merit of scrutinizing possible mechanisms behind the central sensitization model [2]. Eisinger [3], in an editorial comment, raises the issue of heterogeneity permeating Martinez-Lavin's proposition. Since it is difficult to establish a traumatic trigger event in all cases, Eisinger considers multicausality as more reasonable than a single post-traumatic etiology for all cases. Félix and Fontenele [4] further explored this venue, speculating that the orthostatic intolerance symptoms seen in the majority of fibromyalgia patients are a consequence of sympathetic hyperactivity. The idea that a COMT *val-158-met* polymorphism may cause higher catecholamine levels has been explored [5]. Loevinger and colleagues [6] have shown that the metabolic syndrome is more common in individuals with fibromyalgia who also have higher body mass index, blood pressure, and waist-to-hip ratio than controls.

Interestingly, elevated body mass index, blood pressure, and waist-to-hip ratio are associated with sleep-disordered breathing. We recently reported in a study that 50% of the women with obstructive sleep apnea syndrome or upper airway resistance syndrome had chronic pain and more than 11 tender points when pressed with 4 kgf/cm² [7]. Guilleminault and colleagues [8] reported orthostatic intolerance in patients with upper airway resistance syndrome. We believe that the authors investigating this theme should discuss the possibility of sleep-disordered breathing being the missing link between fibromyalgia, pain, disturbed sleep, alpha-delta sleep, hypotension, sympathetic hyperactivity, and metabolic syndrome.

We are conducting investigations into whether exposition to the typical stress of sleep-disordered breathing - with repeated arousal episodes and hypoxemia - has fibromyalgia

as a possible outcome. Our preliminary results underline the need to consider and further explore this hypothesis.

Competing interests

The authors declare that they have no competing interests.

References

1. Martinez-Lavin M: **Biology and therapy of fibromyalgia: Stress, the stress response system, and fibromyalgia.** *Arthritis Res Ther* 2007, **9**:216.
2. Staud R: **Biology and therapy of fibromyalgia: pain in fibromyalgia syndrome.** *Arthritis Res Ther* 2006, **8**:208.
3. Eisinger J: **Dysautonomia, fibromyalgia and reflex dystrophy.** *Arthritis Res Ther* 2007, **9**:105.
4. Félix FHC, Fontenele JB: **Is fibromyalgia a cardiovascular disease? A comment on Martinez-Lavin's review 'Stress, the stress response system, and fibromyalgia'.** *Arthritis Res Ther* 2007, **9**:404.
5. Vargas-Alarcón G, Fragoso JM, Cruz-Robles D, Vargas A, Vargas A, Lao-Villadóniga JI, García-Fructuoso F, Ramos-Kuri M, Hernández F, Springall R, Bojalil R, Vallejo M, Martínez-Lavin M: **Catechol-O-methyltransferase gene haplotypes in Mexican and Spanish patients with fibromyalgia.** *Arthritis Res Ther* 2007, **9**:R110.
6. Loevinger BL, Muller D, Alonso C, Coe CL: **Metabolic syndrome in women with chronic pain.** *Metabol Clin Exp* 2007, **56**:87-93.
7. Germanowicz D, Lumertz MS, Martinez D, Margarites AF: **Coexistência de transtornos respiratórios do sono e síndrome fibromiálgica.** *J Bras Pneumol* 2006, **32**:333-338.
8. Guilleminault C, Faul JL, Stoohs R: **Sleep-disordered breathing and hypotension.** *Am J Respir Crit Care Med* 2001, **164**:1242-1247.