C4.2: Biobehavioral Relationships in Fibromyalgia

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Abstract:

Introduction: Because symptoms of fibromyalgia may be worsened by perceived stress and influenced by interactions of physiological, psychological and/or social processes, further understanding the relationships among fibromyalgia symptoms, perceived stress, and psychoneuroimmunology (PNI)-based biomarkers is needed. The purpose of this biobehavioral pilot study was to examine and characterize the relationships among perceived stress, symptoms of pain and fatigue and immunologic markers in women diagnosed with fibromyalgia.

Method(s): Using a cross-sectional, correlational design, 50 women diagnosed with fibromyalgia (as defined by the American College of Rheumatology criteria) completed the Perceived Stress Scale (PSS); the Short-Form McGill Pain Questionnaire (SF-MPQ) and Brief Pain Inventory (BPI); the Multidimensional Fatigue Inventory (MFI) and the Brief Fatigue Inventory (BFI). A 3 cc blood sample was collected for biomarker analysis (cytokine levels and C-reactive protein [CRP]). Cytokine levels were analyzed using the Bio-Plex® (Bio-Rad; Hercules, CA). Levels of CRP were determined using a high-sensitivity ELISA assay (ALPCO). Pearson’s r was used to examine normally distributed data; Spearman’s rho was used for non-normally distributed data.

Results: Levels of stress were significantly correlated with pain and fatigue and with levels of interleukin (IL)-13. Levels of pain were significantly correlated with fatigue and levels of IL-1Beta, IL-10, IL-12 and IL-13. Levels of fatigue were significantly correlated with IL-10 and with CRP.

Discussion & Conclusions: Study findings demonstrated relationships among the variables of stress, pain and fatigue, and selected cytokines: IL-1Beta (pro-inflammatory); IL-10, -12, -13 (anti-inflammatory), and CRP. Individuals with fibromyalgia often have comorbid conditions of irritable bowel syndrome and/or asthma. Both conditions have been linked to IL-13 activity. Further exploration of potential biomarkers in persons diagnosed with fibromyalgia and specific comorbidities is warranted. Expanded understanding of biobehavioral relationships may lead to targeted interventions for symptom management.

Abstract History:
This abstract has not been presented or accepted for presentation in whole or in part at the SNRS or other scientific meeting.

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No, I (or a member of my immediate family) have not received something of value* from or own stock (or stock options) in a commercial company or institution related directly or indirectly to the subject of my presentation.
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