

Impact of MBSR on pro- and anti-inflammatory cytokines in fibromyalgia

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Background and Objectives

Fibromyalgia (FM) is a disabling syndrome characterized by chronic widespread musculoskeletal pain, increased pain sensitivity including allodynia and hyperalgesia, along with fatigue, sleep and mood disturbances. All these symptoms are known to be prompted by cytokines when the balance between pro- and anti-inflammatory cytokines is altered, as seen in conditions such as autoimmune diseases. Following the objectives of the EUDAIMON study, in this presentation we aim to explore the relationship between mindfulness, clinical symptomatology of FM and inflammatory biomarkers, compared to healthy controls. We therefore examine the impact of a MBSR intervention on the FM symptoms and on post-treatment levels of pro- (IL-6, IL-8), anti-inflammatory cytokines (IL-10), and hs-CRP in serum.

Method

From the EUDAIMON's original sample (n=225), a subgroup of 63 patients with cytokine-specific inclusion criteria were selected from the TAU+MBSR and the TAU conditions. In addition, serum samples of 35 age- and gender-matched controls were taken. The following measures were administrated at baseline and at post-intervention: FIQ-R (Revised Fibromyalgia Impact Questionnaire), HADS-A/D (Hospital Anxiety and Depression Scale-Anxiety/Depression), PSS-10 (Perceived Stress Scale-10) and FFMQ (Five Facet Mindfulness Questionnaire). Blood samples for evaluating levels of inflammatory biomarkers in serum were taken between 8 and 10 am, after fasting.

Results

Significant correlations were found between specific mindfulness skills, FMS symptomatology, IL-8 and hs-CRP. Remarkably, MBSR was able to significantly improve most of the clinical variables (functional status, anxiety and depressive symptoms) although the serum levels of cytokines did not substantially change.

Discussion and Conclusions

In conclusion, MBSR reduces clinical severity of FMS, though a potential role of chronic sub-inflammation could not be clearly demonstrated.