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Fibromyalgia Patients May Be Grouped by Symptom and Severity Level, Informing Therapeutic Decisions, Study Finds

March 6, 2014, Phoenix, AZ -- Examining outcome data on fibromyalgia, researchers were able to fit fibromyalgia patients into 1 of 4 symptom domains, each distinguished by greater presence or severity of specific symptoms. The study results, which suggest a step forward for individualized patient therapy, were presented in a scientific poster today at the 30th Annual Meeting of the American Academy of Pain Medicine.

Fibromyalgia is a condition marked by many symptoms that include widespread pain, fatigue, depression and sleep disturbances. However, not every fibromyalgia patient experiences every symptom or to the same degree, complicating therapeutic decisions.

"Currently, fibromyalgia is ineffectively treated and heterogeneity is part of the problem," said lead study author, Ann Vincent, MBBS, MD, former medical director and now a fulltime researcher with the Mayo Fibromyalgia Clinic in Rochester, Minn.

"When a patient comes into the clinic, there is no standardized way to classify the heterogeneity in a way to understand their most bothersome symptom. Different physicians have their own ad hoc methods and choices of medications," Dr. Vincent said. "What if we could have a better way to assess patients by classifying the illness from their perspective in terms of their most bothersome symptoms?"

Guided by that research question, study investigators were the first to use core symptom domains recommended by the fibromyalgia working group of the Outcome Measures in Rheumatoid Arthritis Clinical Trials [OMERACT] initiative to identify subgroups of patients with similar symptom profiles. The OMERACT initiative develops and validates outcome measures to assist

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with research in clinical trials. The Institutional Review Board of the Mayo Clinic approved the study, which was partially funded by grants through the Mayo Clinic and the National Institutes of Health.

"We were looking to cluster participants according to their response to a comprehensive symptom questionnaire package to identify groups of individuals who reported similar symptom profiles," Dr. Vincent said.

Included for analysis were 581 females with a mean age of 55.1, each with a fibromyalgia diagnosis. The patients completed several outcome measures recommended by OMERACT as follows: the Brief Pain Inventory, 30-item Profile of Mood States, Medical Outcomes Sleep Scale, Multidimensional Fatigue Inventory, Multiple Ability Self-Report Questionnaire, Fibromyalgia Impact Questionnaire-Revised and Medical Outcomes Short Form-36.

The study investigators then used a statistical technique that groups or clusters similar observations or values to identify subgroups of patients. What emerged from the data were 4 clusters, distinguished by differences in symptomology and pain severity.

Patients in Cluster 1 had the lowest average levels across all symptoms, and Cluster 5 had the highest levels. There were differences also between the clusters that reflected moderate symptom levels – Clusters 2 and 3. Cluster 2 patients had less depression, anxiety and dyscognition, also known as the "fibro fog," but had more pain, stiffness, dysfunction, sleep disturbances and fatigue than the patients in Cluster 3.

Dr. Vincent, who frequently studies fatigue and related symptoms in fibromyalgia patients, said further study in other samples is needed to validate the findings, after which, the ability to target and tailor treatments to specific symptoms could bring better outcomes.

For example, Dr. Vincent said, if a patient's scores place her in Cluster 1, in which subjects scored comparatively low on all symptoms, a clinician might consider initial management with non-pharmacological treatments, such as cognitive-behavioral therapy, exercise, physical therapy and education for self-management of symptoms, with the option of adding pharmacological therapies if initial treatment response fails. Conversely, she explained, patients in Cluster 4, marked by higher scores on symptoms, might be preferentially triaged to intensive pain rehabilitation, given that regular outpatient treatment is frequently ineffective in this patient population.

"Obviously, this needs to be studied," Dr. Vincent said, "and this is our next step."

Poster 121 – OMERACT-Based Fibromyalgia Symptom Subgroups: An Exploratory Cluster Analysis

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