

Methods of Determining Arthritis Classification

TECHNICAL FIELD

Diagnostic: Gene-based, Arthritis Classification (2003-0618)

BACKGROUND

Chronic inflammatory arthritis is a source of morbidity for about 70,000 children in the United States alone. Subtypes of juvenile arthritis are generally characterized by (1) the number of affected joints within six months of onset and, (2) the age of onset. Currently, the disease course is most often determined by the number of affected joints beyond the first six months of disease. While the measurement of cytokines and chemotactic cytokines in body fluids and synovial tissue has provided insight into the disease, a useful diagnostic has not been developed and in particular, predicting disease course for children with pauciarticular onset arthritis has not been possible.

While many children with pauciarticular onset arthritis experience no long term consequences, a condition of a subtype of this disease, spondylarthropathies, may affect the spine, tendons and eyes, with chronic damage occurring to the eyes.

Therefore the development of a method of determining the classification of juvenile arthritis is desirable so that patients likely to benefit from early aggressive treatment can be identified.



TECHNOLOGY

A discovery from the laboratory of Dr. David Glass indicates that certain inflammatory related nucleotide sequences are expressed differently in the various classifications of juvenile arthritis. The expression patterns of the nucleotide sequences of interest in peripheral blood monocytes and synovial fluid mononuclear cells differ among the categories of juvenile arthritides. This new technology determines the disease classification by analyzing the expression patterns of the nucleotide sequences of interest from various tissues in a subject. It provides a method of analyzing disease progression, as well as the efficiency of specific modulating compounds used to treat arthritis. This new technology involves analyzing the expression pattern of CXCL chemokines to classify juvenile arthritis in a subject, to predict the course of the juvenile arthritis, and/or to predict the efficacy of treatments. This technology is applicable in analyzing disease progression in a juvenile arthritis and it is envisioned that a diagnostic kit could easily be developed.

APPLICATIONS

1. Diagnostic Marker to Classify Arthritis

2. Research tool

ADVANTAGES

- **Direct marker for disease classification**
- **Standardized diagnostic tool**
- **Better manage and treat disease state**

INVESTIGATOR

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STATUS

Patent applications pending.

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