Diagnostic method for patients with rheumatoid arthritis

Epigenetic markers for the diagnosis and severity classification of patients with rheumatoid arthritis.

Medical need

Rheumatoid arthritis (RA) is a chronic disease that causes joint damage, disability, and a poor quality of life. Early detection of RA is crucial to prevent severe damage and improve patients' quality of life. However, in the early stages, the symptoms can be confused with other diseases, making diagnosis difficult. Although there are biomarkers such as rheumatoid factor and ACPA antibodies, these are not completely accurate.

Tecnology

Method for diagnosing and classifying the severity of patients with RA using epigenetic markers based on DNA methylation alterations.
Genomic DNA is extracted from the leukocyte layer of a blood sample. The level of genomic DNA methylation is then analyzed using established techniques for this type of quantification.

Oportunity

Prevalence

It affects between 0.5-1% of the population.

Spain: 240,000 patients. 20,000 new diagnoses each year.

Market

Global diagnostics market: $2,775.1 million in 2023.

CAGR 5,4%.

Other solutions

Use of other biomarkers:
- Rheumatoid factor.
- Antibodies against citrullinated proteins.

Results

Two cohorts of patients were used:
- Discovery cohort (64 patients, 32 healthy, 32 diseased in two categories): Array panel analysis and validation by pyrosequencing. Five methylation sites were selected.
- Validation cohort (220 patients): The analysis revealed a significant association ($p<0.05$)

Roadmap

IBIMA plataforma BIONAND is looking for a partner to further develop the technology through a co-development or licensing agreement.

Patent:
National patent application
Priority: 03/05/2024

Team:
Research group of Inflammatory and Autoimmune Diseases.

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