A122 THE MICRORNAS AS BIOMARKERS IN KNEE OSTEOARTHRITIS

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Introduction Among the new biomarkers associated with rheumatoid arthritis (RA), we describe the microRNA (miRNAs). miRNAs are small RNAs of 21–23 nucleotides able to inhibit gene expression. The objectives of this work are to identify the original miRNAs as biomarkers in two different chronic bone and joint diseases, osteoarthritis (OA) and RA.

Materials and Methods Serum samples and fresh blood were obtained from 21 patients with severe knee OA (score of Kellgren/Lawrence at least 3/4), 8 RA patients and 10 healthy donors as controls. We analysed the systemic expression of miRNAs in the three groups of patients using miRNA microarrays. We identified the predictive targets of miRNAs using the DIANA-microT software.

Results OA patients had a mean age of 71 years, had a mean radiological score of Kellgren/Lawrence of 3.8 and their pain has evolved over 7 years. We identified 37 miRNAs in RA and 18 miRNAs in severe knee OA whose blood expression was altered compared to healthy subjects. In OA, nine miRNA were upregulated (including miR-228, miR-574-3p, miR-597) and nine miRNAs were downregulated (including miR-150, miR-222, miR-363 and miR-423). None of miRNAs in OA is common with those we found in RA. Potential targets of miRNAs, specifically expressed in severe knee OA, appears to be largely involved in the Wnt signaling pathway. In contrast, the miRNAs expressed differently in the blood of our RA patients seem to target the elements of the signalling pathway MAP kinase.

Conclusion Our results suggest that miRNAs may constitute new biomarkers potentially interesting. In addition, miRNAs could be involved in the pathogenesis of RA and OA. Further work is ongoing in order to assess the pathophysiological and the functional role of these miRNAs in OA.