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Circulating proteins revealed to be associated to knee radiographic OA

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In this work we have undertaken a large-scale study in order to find serum proteins that could serve as potential indicators of Osteoarthritis (OA). Antibody suspension bead arrays were applied to firstly profile serum samples from patients with knee OA (n=288) Kellgren-Lawrence (K/L) scored and compare to controls (n=96) subjects and patients with rheumatoid arthritis (RA, n=288) and psoriatic arthritis (PSA, n=288). The serum protein content was labelled and protein profiles obtained using 174 antibodies from the Human Protein Atlas targeting 78 different proteins. A focused bead array was then built to verify the results obtained in the screening in an independent set of serum samples from patients with OA (n=196), RA (n=192), PSA (n=192) and control individuals (n=92). A lineal regression analysis adjusting by sex, age and body mass index (BMI) was applied to observe differences in protein profiles from the different sample groups. Four proteins were found significantly elevated (P value <0.05) in serum from OA patients compared to controls: S100 calcium binding protein A6 (S100A6), Leptin (LEP), Complement 3 (C3) and Inter-Alpha-Trypsin Inhibitor Heavy Chain (ITIH1). Two proteins, Apolipoprotein A-I (APOA1) and Vitamin D-binding protein (GC) were significantly increased in controls compared to OA. These six proteins show modulated levels between K&L >1 OA and controls. C3 levels can also discriminate among OA, RA and PSA patients. The alterations of these proteins provide new protein profiles in the disease and can be potential radiographic indicators of knee OA.

Biography

Lucía Lourido Salas is a PhD student from Instituto de Investigación Biomédica de A Coruña at Hospital Universitario de A Coruña working on the biomarker field focused on osteoarthritis disease and with 7 papers published during her five years as a PhD student.

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