#652 - Posters

Deregulated Clusterin As A Marker Of Bone Fragility: New Insights Into The Pathophysiology Of Osteoporosis

Orthopaedics / Pelvis, Hip & Femur / Epidemiology, Prevention & Diagnosis

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Background
Clusterin (CLU) is a secreted heterodimeric glycoprotein expressed in all organism fluids as well as in the intracellular matrix. CLU plays pivotal roles in several pathological processes, also affecting muscle and bone homeostasis.

Objectives
The aim of this study was to investigate the role of *CLU* in the development of osteoporosis and bone fragility fractures.

Study Design & Methods
Comparative quantitative RT-PCR analysis of *CLU* expression was performed in both osteoblasts and PBMCs from osteoporotic patients (OP) and healthy individuals (CTR). Furthermore, immunohistochemical analysis on femoral head tissues and enzyme-linked immunosorbent assay (ELISA) in plasma samples were performed to investigate CLU expression pattern. Finally, enotyping of *CLU* rs11136000 polymorphism has also been performed by qPCR assays to explore a possible association with *CLU* expression levels.

Results
Data obtained showed a significantly increased expression level of secreted *CLU* isoform in PBMCs and osteoblasts from OP patients. Immunohistochemical analysis confirm the increased expression of CLU in OP patients, both in osteocytes and osteoblasts, while plasma analysis reveals a statistically significant decrease of CLU levels. Unfortunately, no functional association between *CLU* expression levels and the presence of *CLU* rs11136000 polymorphism in OP patients was found.

Conclusions
These data suggest a potential role played by secreted CLU as a potential biomarker for the diagnosis and prognosis of OP and fragility fractures.