

ATP, calcium and magnesium levels in platelets of patients with primary fibromyalgia.

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OBJECTIVES: To evaluate the intracellular levels of the high energy adenosine triphosphate nucleotide ATP and essential divalent cations, calcium and magnesium, in platelets of patients affected by primary fibromyalgia syndrome (FMs).

DESIGN AND METHOD: Platelet ATP and cation concentrations were measured in 25 patients affected by FMs and 25 healthy volunteers through a chemiluminescent and a fluorimetric assay, respectively.

RESULTS: Significant lower ATP levels were observed inside platelets of FM patients (fmol ATP/plt: 0.0169 ± 0.0012 vs. healthy controls, fmol ATP/plt: 0.0306 ± 0.0023 , mean \pm SEM) (***) ($P < 0.0001$). A trend towards higher calcium concentrations ($P = 0.06$) together with significant increased magnesium levels were also reported in platelets of patients by comparison with controls ($P = 0.02$).

CONCLUSIONS: This preliminary study suggests that disturbances in the homeostasis of platelet ATP metabolism-signaling and calcium-magnesium flows might have a relevance in the pathogenesis of FMs.