



POSTER PRESENTATION

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Expression of PPAR α , β , and γ in the Hartley guinea pig model of primary osteoarthritis

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Background

Peroxisome proliferator-activated receptors (PPARs) are members of the nuclear receptor superfamily. Three isoforms have been identified: PPAR α , PPAR β - δ and PPAR γ . Several in vitro and in vivo studies suggest that PPAR γ may have protective roles in osteoarthritis (OA). So far, little is known about the pattern of PPAR expression during the progression of OA and cartilage degradation.

Aim

To investigate the expression of PPAR α , β , and γ in cartilage over the course of OA in the spontaneous Hartley guinea pig model.

Methods

Hartley guinea pigs were sacrificed at 2 (control group), 4, 8, and 12 (n = 6 per group) month-old of age. Cartilage was obtained from the central portion of the medial tibial plateau. Cartilage degradation was evaluated histologically using the Osteoarthritis Research Society International (OARSI) guidelines. The expression of PPAR α , β and γ was analyzed by immunohistochemistry. The non-parametric Spearman test was used for the correlation analysis between the protein expression levels and histological scores.

Results

PPAR α , β and γ , were detected in medial tibial plateaus from control animals. There was no significant change in the levels of PPAR α and PPAR β over the course of OA. In contrast, PPAR γ expression decreased during the progression of OA. Correlation analysis revealed a negative

correlation between PPAR γ levels and histological score of OA.

Conclusion

Expression of PPAR γ in cartilage decreased during the course of OA. These data suggest that loss of PPAR γ expression in cartilage may contribute to the pathogenesis of OA.

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