NF-κB signaling pathway-based research of antagonism between vaspin and leptin in osteoarthritis

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Abstract

Leptin and visceral adipose tissue-derived serine protease inhibitor(Vaspin) both belonged to the adipokines family. They were closely related to the pathophysiology of osteoarthritis (OA). Our studies showed that leptin plays a catabolic role on articular cartilage. Recently, we demonstrated that the vaspin levels were markedly decreased in patients with OA, and vaspin prevented the inflammation and degradation of chondrocytes, which closely related to the NF-κB signaling pathway. Besides, our pre-experiment studies demonstrated vaspin suppress leptin-induced degradation on chondrocytes, while the current mechanism was still absent. We speculate that the antagonism and imbalance between vaspin and leptin may play an important role during the pathophysiology of OA. In the present study, we will inspect the metabolism induced by vaspin and leptin in chondrocytes and also inflammatory and angiogenesis in synovial tissues, and find out the antagonism role between vaspin and leptin. We will assess the effects of vaspin and leptin on the NF-κB signaling pathway changes and find out related mechanisms. Through the animal model with intra-articular injection, we will find out the precise antagonism role between these two adipokines. This project will explore the role of antagonism between adipokines during the pathophysiology of OA.

Recent Publications (minimum 5)

1. Bao Jiapeng, Chen Weiping. A report on the application of PBL teaching method in teaching sports medicine[J]. China Continuing Medical Education, 2019, 11(12):3. DOI:CNKI:SUN:JXUY.0.2019-12-005.
2. Bao Japeng. Research on the role of Vaspin in osteoarthritis and its mechanism[D]. Zhejiang University,2016.Room R, BaborT, Rehm J (2005) Alcohol and public health. Lancet 365: 519-530.
3. Huang Kai, CAI Haili, Bao Jiapeng, et al. Effect of dehydroepiandrosterone on the expression of ADAMTS-4, ADAMTS-5 and TIMP-3 mRNA in cartilage of rabbits with osteoarthritis[C]//Annual Conference of Orthopaedic Science of Zhejiang Province in 2008.0[2025-01-09].DOI:ConferenceArticle/5aa091b2c095d7222077dd90.
4. Bao Jiapeng. Distribution of endolipin in serum and knee synovial fluid of patients with osteoarthritis and study on the ability of different tissues in the joint to produce endolipin[D]. Zhejiang University,2010.
5. Xiong Yan, Bao Jiapeng, Chen Weiping, et al. Indications and efficacy of medial patellofemoral ligament reconstruction combined with Fulkerson tibial tuberosity osteotomy for recurrent patellar dislocation[J]. [2025-01-09].



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Notes/Comments: