腰椎间盘髓核退变的MRI研究

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摘 要： Objective, The purpose of this study was to correlate T2 signal intensity values in nucleus pulposus of lumbar discs with patient age,gender and stage of nucleus pulposus degeneration.Methods, Lumbar imaging findings of 422 cases subjects were retrospectively reviewed through T2 signal intensity values of nucleus pulposus evaluated based on the signal intensity values of MR T2-weighted mid-sagittal images of the lumbar spine,the t2 signal intensity values at all five lumbar levels (from L5-S1 to L1-L2) between male and female were used independent sample t-test and the Spearman correlation analysis.The age and grade of nucleus pulposus of disc degeneration and T2 signal intensity values were estimated by calculating and Chi-square test and the Spearman correlation analysis.The t-test was used to correlate the different anatomic levels of disc degeneration;T2 signal intensity values among the five different anatomic levels using non-parametric correlation analysis.Results, There were significantly differences in T2 signal intensity values of nucleus pulposus at the same grade and anatomic level between male and female.Advanced with age,T2 signal intensity values of nucleus pulposus decreased and stage of disc degeneration increased accordingly.T2 signal intensity values may represent the nucleus pulposus degeneration of interverterbral disc.L4-L5 was the highest incidence among the nucleus pulposus degeneration of intervertebral disc.Conclusions, The T2 signal intensity values based approach may be a feasible and practical tool to determine nucleus pulposus degeneration.T2 signal intensity values of nucleus pulposus of lumbar intervertebral disc are correlated with grade of degeneration and patient age.

关键词: Magnetic resonance imaging;T2-weighted imaging;Nucleus pulposus degeneration

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文献标引: 孔庆奎，张立涛，谢元忠，付孟莉，武玉恒，程琮，陈绪珠.腰椎间盘髓核退变的MRI研究[J/CD].中华临床医师杂志：电子版,2011,5(21):6351-6357. 复制

参考文献：

[1]，Benneker LM,Heini PF,Anderson SE,et al.Correlation of radiographic and MRI parameters to morphological and biochemical assessment of intervertebral disc degeneration.Eur Spine J,2005,14:27-35. [PubMed]

[2]，Chung SA,Khan SN,Diwan AD.The molecular basis of intervertebral disc degeneration.Orthop Clin North Am,2003,34:209-219. [PubMed]

[3]，Anderson DG,Tannoury C.Molecular pathogenic factors in symptomatic disc degeneration.Spine J,2005,5:260S-266S. [PubMed]

[4]，Niinim kia J,Korkiakoskia A,Ojala O,et al.Association between visual degeneration of intervertebral discs and the apparent diffusion coefficient.Mag Reson Imaging,2009,27:641-647. [PubMed]

[5]，Wang C,Auerbach JD,Witschey WR,et al.Advances in Magnetic Resonance Imaging for the assessment of degenerative disc disease of the lumbar spine.Semin Spine Surg,2007,19:65-71. [PubMed] [PubMed].

[6]，Walker MH,Anderson DG.Molecular basis of intervertebral disc degeneration.Spine,2004,4:158S-166S. [PubMed]

[7]，Choi YS.Pathophysiology of degenerative disc disease.Asian Spine J,2009,3:39-44. [PubMed]

[8]，Willburger RE,Ehiosun UK,Kuhnen C,et al.Clinical symptoms in lumbar disc herniations and their correlation to the histological composition of the extruded disc material.Spine,2004,29:1655-1661. [PubMed]

[9]，Griffith JF,Wang YX,Antonio GE,et al.Modified Pfirrmann grading system for lumbar intervertebral disc degeneration.Spine,2007,32:E708-712. [PubMed]

[10]，Southern EP,Fye MA,Panjabi MM,et al.Disc degeneration:a human cadaveric study correlating magnetic resonance imaging and quantitative discomanometry.Spine,2000,25:2171-2175. [PubMed]

[11], Pfirrmann CW,Metzdorf A,Zanetti M,et al.Magnetic resonance classification of lumbar intervertebral disc degeneration.Spine,2001,26:1873-1878.[PubMed]
[12], Marinelli NL,Haughton VM,Anderson PA.T2 relaxation times correlated with Stage of lumbar intervertebral disc degeneration and patient age.AJNR Am J Neuroradiol,2010,31:1278-1282.[PubMed]
[13], Kerttula L,Kurunlahti M,Jauhiainen J,et al.Apparent diffusion coefficients and T2 relaxation time measurements to evaluate disc degeneration:a quantitative MR study of young patients with previous vertebral fracture.Acta Radiol,2001,42:585-591.[PubMed]
[14], Tertti M,Paajanen H,Laato M,et al.Disc degeneration in magnetic resonance imaging:a comparative biochemical,histologic,and radiologic study in cadaver spines.Spine,1991,16:629-634.[PubMed]
[15], Watanabe A,Benneker LM,Boesch C,et al.Classification of intervertebral disc degeneration with axial T2 mapping.AJR Am J Roentgenol,2007,189:936-942.[PubMed]
[16], Marinelli NL,Haughton VM,Mu oz A,et al.T2 relaxation times of intervertebral disc tissue correlated with water content and proteoglycan content.Spine,2009,34:520-524.[PubMed]
[17], Leung VY,Hung SC,Li LC,et al.Age-related degeneration of lumbar intervertebral discs in rabbits revealed by deuterium oxide-assisted MRI.Osteoarthritis Cartilage,2008,16:1312-1318.[PubMed]
[18], An HS,Masuda K.Relevance of in vitro and in vivo models for intervertebral disc degeneration.J Bone Joint Surg Am,2006,88:88-94.[PubMed]
[19], Murakami H,Yoon ST,Attallah-Wasif ES,et al.The expression of anabolic cytokines in intervertebral discs in age-related degeneration.Spine,2006,31:1770-1774.[PubMed]
[20], Tsuji T,Chiba K,Imabayashi H,et al.Age-related changes in expression of tissue inhibitor of metalloproteinases-associated with transition from the notochordal nucleus pulposus to the fibrocartilaginous nucleus pulposus in rabbit intervertebral disc.Spine,2007,32:849-856.[PubMed]
[21], Bachmeier BE,Nerlich A,Mittermaier N,et al.Matrix metalloproteinase expression levels suggest distinct enzyme roles during lumbar disc herniation and degeneration.Eur Spine J,2009,18:1573-1586.[PubMed]
[22], Boos N,Weissbach S,Rohrbach H,et al.Classification of age-related changes in lumbar intervertebral discs:2002 Volvo Award in basic science.Spine,2002,27:2631-2644.[PubMed]
[23], Weiler C,Nerlich AG,Zipperer J,et al.Award Competition in Basic Science:expression of major matrix metalloproteinases is associated with intervertebral disc degradation and resorption.Eur Spine J,2002,11:308-320.[PubMed]

论　著

连续APACHEⅢ评分在重症监护病房的应用
田金飞，向小卫，雷明慧，苗丽霞，付元元，闵利，张志敏，汤彦. .中华临床医师杂志：电子版
2011;5(21):6566-6569.
摘要 FullText | PDF | 评论 | 收藏

不同浓度透明质酸对骨髓来源间充质干细胞成软骨分化的影响
王昌耀，于丽，王英振，寇建强，夏长所，吕成昱，张海宁，徐浩. .中华临床医师杂志：电子版
2011;5(21):6213-6220.
摘要 FullText | PDF | 评论 | 收藏

人脂肪源性干细胞生物学特性的研究
王伟，撒亚莲，严新民，李士欣. .中华临床医师杂志：电子版
2011;5(21):6221-6225.
摘要 FullText | PDF | 评论 | 收藏

普伐他汀联合髓芯减压术治疗激素性兔股骨头坏死的实验研究
乐锦波，杜远立，向选平，茹能，邓娟娟，武斌. .中华临床医师杂志：电子版
2011;5(21):6226-6230.
摘要 FullText | PDF | 评论 | 收藏

类风湿关节炎患者股骨和腰椎部位骨密度的临床研究
刘童，裴必伟，徐胜前，邓娟，陈晨. .中华临床医师杂志：电子版
2011;5(21):6231-6235.
摘要 FullText | PDF | 评论 | 收藏

川崎病伴发冠状动脉损害的外科治疗
薛清，徐志云，韩林，张冠鑫，陆方林，唐昊，徐激斌. .中华临床医师杂志：电子版
2011;5(21):6236-6238.
摘要 FullText | PDF | 评论 | 收藏

老年冠心病女性患者临床特点及经皮冠状动脉介入治疗疗效分析
唐晓芳，王婧，袁晋青，杨跃进，乔树宾，刘海波，尤士杰，陈珏，吴元，吴永健，姚民，高润霖. .中华临床医师杂志：电子版
2011;5(21):6239-6243.

摘要 FullText | PDF | 评论 | 收藏

药物涂层支架置入术后心脏事件随访及相关危险因素分析
韦亚林，马依彤，杨毅宁，谢翔，李晓梅，马翔，陈铀，郑颖颖. .中华临床医师杂志：电子版
2011;5(21):6244-6250.
摘要 FullText | PDF | 评论 | 收藏

急性冠状动脉综合征患者B型钠尿肽和应激血糖水平变化及与冠状动脉病变程度关系
魏鹏，付强，白洁，陶志文. .中华临床医师杂志：电子版
2011;5(21):6251-6255.
摘要 FullText | PDF | 评论 | 收藏

N-末端脑钠肽前体联合超声心动图对急性肺栓塞患者预后的评估
周天恩，张萌，林辉，杨正飞，蒋龙元. .中华临床医师杂志：电子版
2011;5(21):6256-6259.
摘要 FullText | PDF | 评论 | 收藏

CT与MRI诊断胰腺癌方案优选的多中心研究
马霄虹，赵心明，张红梅，欧阳汉，曾蒙苏，宋彬，郭宁，胡敏霞，张瑾，叶枫，胡毅，屈东，周纯武. .中华临床医师杂志：电子版
2011;5(21):6260-6265.
摘要 FullText | PDF | 评论 | 收藏

5-氮-2-脱氧胞苷调控胆管癌p53-Bax线粒体凋亡通路DNA甲基化诱导化疗敏感性的研究
刘小方，于绍平，张翠生，王在秋，苏海龙，周先亭. .中华临床医师杂志：电子版
2011;5(21):6266-6272.
摘要 FullText | PDF | 评论 | 收藏

Fas相关因子1和Survivin在胃癌中的表达及其与患者预后的关系
刘爱群，葛莲英，邵红，罗元，林思彤. .中华临床医师杂志：电子版
2011;5(21):6273-6278.
摘要 FullText | PDF | 评论 | 收藏

miR-886-3p在肾癌组织及癌旁组织中差异表达及其临床意义
任瑞，李贤新，池泽湃，周亮，王勇，来永庆，吴训，张士强，桂耀庭，关志忱，蔡志明，叶炯贤. .中华临床医师杂志：电子版
2011;5(21):6279-6284.
摘要 FullText | PDF | 评论 | 收藏

代谢综合征诊断指标与前列腺特异性抗原相关性研究
张辉，王玉秋，袁晓东，丁森泰，李子尧，吕家驹. .中华临床医师杂志：电子版
2011;5(21):6285-6290.
摘要 FullText | PDF | 评论 | 收藏

侵袭型功能性垂体腺瘤神经导航下经蝶手术疗效
许志勤，苏长保，王任直，任祖渊，杨义，马文斌，李永宁，幸兵，连伟，姚勇. .中华临床医师杂志：电子版
2011;5(21):6291-6294.
摘要 FullText | PDF | 评论 | 收藏

注意缺陷多动障碍患儿事件相关电位N270的研究
毛薇，施渑，韩春玉，王爱华，张纪水，戚晓红，王玉平. .中华临床医师杂志：电子版
2011;5(21):6295-6299.
摘要 FullText | PDF | 评论 | 收藏

自闭症儿童行为症状的中日比较研究
于晓辉，吕晓彤，太田昌孝. .中华临床医师杂志：电子版
2011;5(21):6300-6304.
摘要 FullText | PDF | 评论 | 收藏

住院精神病性患者血清甲状腺激素与血脂相关性的现状调查研究
秦虹云. .中华临床医师杂志：电子版
2011;5(21):6305-6309.
摘要 FullText | PDF | 评论 | 收藏

骁悉联合更昔洛韦治疗巨细胞病毒感染的协同作用研究
钱叶勇，石炳毅，柏宏伟，常京元，贾金凤，齐宝玉，王振，范宇. .中华临床医师杂志：电子版
2011;5(21):6310-6312.
摘要 FullText | PDF | 评论 | 收藏

高频超声对腹直肌及其周围疾病的诊断价值
吕海霞，鄂占森，柳展梅，张颖，陈峥，赵新宇，徐文中，陈敏. .中华临床医师杂志：电子版

2011;5(21):6313-6317.
摘要 FullText | PDF | 评论 | 收藏

细胞因子诱导的杀伤细胞体外培养的初步研究
郭智，陈惠仁，何学鹏，刘晓东，张媛，杨凯. .中华临床医师杂志：电子版
2011;5(21):6318-6321.
摘要 FullText | PDF | 评论 | 收藏

APP17肽通过抑制细胞内ROS保护紫外线照射后人皮肤成纤维细胞
陈慧，连石，朱威. .中华临床医师杂志：电子版
2011;5(21):6322-6328.
摘要 FullText | PDF | 评论 | 收藏

热带念珠菌临床分离株对氟康唑耐药分子机制的研究
周永安，窦娟，张全斌，马云霞. .中华临床医师杂志：电子版
2011;5(21):6329-6335.
摘要 FullText | PDF | 评论 | 收藏

压力性尿失禁诊疗135例临床分析
李环，吴瑞芳，李瑞珍，张礼婕，王苏梅，张巍颖. .中华临床医师杂志：电子版
2011;5(21):6336-6341.
摘要 FullText | PDF | 评论 | 收藏

心脏电机械偶联与Flash双源CT冠状动脉成像在高心率患者中的应用
韩瑞娟，孙凯，李立刚，陈九宏. .中华临床医师杂志：电子版
2011;5(21):6342-6350.
摘要 FullText | PDF | 评论 | 收藏

腰椎间盘髓核退变的MRI研究
孔庆奎，张立涛，谢元忠，付孟莉，武玉恒，程琮，陈绪珠. .中华临床医师杂志：电子版
2011;5(21):6351-6357.
摘要 FullText | PDF | 评论 | 收藏

终末期肝病模型联合白细胞介素15评分对慢性乙型肝炎预后预测
沈美龙，徐洪涛，邢同京，咸建春，韩立彬，王开林，李浩. .中华临床医师杂志：电子版
2011;5(21):6358-6362.
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