·临床论著·

血清β-半乳糖凝集素-3在非创伤股骨头坏死中的意义△

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摘要：［**目的**］本研究旨在探讨血清β-半乳糖凝集素-3（lectin galactoside-binding soluble 3, LGALS3）水平在非创伤性股骨头坏死（non-traumatic osteonecrosis of the femoral head, NONFH）诊断中的临床价值。［**方法**］2023年4月—2023年9月纳入NONFH患者84例为坏死组，选取同期检者健康人78例为对照组。采用酶联免疫吸附法检测两组血清中LGALS3的水平，并收集相关临床资料，包括性别、年龄、体重指数（Body Mass Index, BMI）、吸烟史、NONFH病因、受累侧数、疼痛视觉模拟评分（Visual Analogue Scale, VAS）、Harris评分、坏死程度及ARCO分期。对两组LGALS3浓度及其与各临床参数的关系进行比较分析。［**结果**］坏死组血清中LGALS3浓度显著高于正常人组[(9.8±7.7) ng/ml *vs* (4.2±4.1) ng/ml, *P*<0.01]。在NONFH患者中，双侧受累组的LGALS3浓度显著高于单侧受累组[(14.7±8.) ng/ml *vs* (5.3±3.3) ng/ml, *P*<0.001]，股骨头塌陷者显著高于未塌陷者[(13.5±7.3) ng/ml *vs* (3.1±1.2) ng/ml, P<0.001]。根据ARCO分期，从Ⅰ期至Ⅳ期LGALS3浓度呈逐渐升高趋势，且各亚组间差异有统计学意义[(2.1±1.0) ng/ml *vs* (4.1±1.3) ng/ml *vs* (11.0±5.8) ng/ml *vs* (16.8±8.2) ng/ml, *P*<0.001]。NONFH患者的LGALS3浓度与VAS评分呈显著正相关（*r*=0.843, *P*<0.001），与Harris评分呈显著负相关（*r*=-0.710, *P*<0.001），与ARCO分期呈显著正相关（*r*=0.822, *P*<0.001）。ROC分析表明，LGALS3浓度预测是否NONFH的曲线下面积（area under curve, AUC）为0.769。［**结论**］血清中的LGALS3水平可反映NONFH病情的严重程度，并可能作为该病早期诊断的潜在生物标志物。

关键词：非创伤性股骨头坏死，β-半乳糖凝集素-3，酶联免疫吸附法

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Abstract: [**Objective**] To investigate the clinical value of serum β-galactoside-binding soluble 3 (LGALS3) in the diagnosis of non-traumatic osteonecrosis of the femoral head (NONFH). [**Methods**] From April 2023 to September 2023, 84 NONFH patients were enrolled asn ecrosis group, while other 78 healthy subjects were selected as control group. The serum LGALS3 concentration in the two groups were detected by enzyme-linked immunosorbent assay, and related clinical data were collected, including gender, age, body mass index (BMI), smoking history, NONFH etiology, number of affected sides, visual analogue scale (VAS) for pain, Harris score, and ARCO staging. TheLGALS3 concentration and its relationship with clinical parameters in the groups divided by different facots were compared and analyzed. [**Results**] The serum LGALS3 concentration in the necrotic group was significantly higher than that in healthy group [(9.8±7.7) ng/ml *vs* (4.2±4.1) ng/ml, P0.01]. In patients with NONFH, LGALS3 concentration was significantly higher in the bilateral affected than in the unilat-eral involved [(14.7±8.) ng/ml *vs* (5.3±3.3) ng/ml, *P*<0.001], the femoral head collapsed was significantly higher than the non-collapsed[(13.5±7.3) ng/ml *vs* (3.1±1.2) ng/ml, *P*<0.001]. Based on ARCO staging, the concentration of LGALS3 gradually increased from stage I tostage IV, with statistically significant differences among the subgroups [(2.1±1.0) ng/ml *vs* (4.1±1.3) ng/ml *vs* (11.0±5.8) ng/ml *vs* (16.8±8.2) ng/ml, *P*<0.001]. LGALS3 concentration in NONFH patients was significantly positively correlated with VAS score (*r*=0.843, *P*<0.001),whereaswas significantly negatively correlated with Harris score (*r*=-0.710, *P*<0.001), and positively correlated with ARCO stage (*r*=0.822,*P*<0.001). ROC analysis showed that the area under curve (AUC) of LGALS3 concentration predicting NONFH was of 0.769. [**Conclusion**]

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