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长期服用肾上腺糖皮质激素对儿童青少年生长激素分泌的影响及重组人生长激素治疗的疗效和安全性

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Effect of Long term Glucocorticoid Treatment on Human Growth Hormone Secretion in Children and Adolescents and the Safety and Effectiveness of Recombinant Human Growth Hormone Treatment

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摘要 初步探讨长期服用肾上腺糖皮质激素对儿童青少年体内人生长激素(hGH)分泌的影响并观察重组人生长激素(rhGH)治疗的疗效和安全性。方法 北京协和医院1999年9月至2009年11月间诊治的12例患儿纳入本研究，其平均年龄为(10.4±1.2)岁，均使用0.5～2.0 mg/(kg·d)的泼尼松治疗6～18个月。定期评价患儿的生长发育情况，对每例患儿行2种hGH兴奋试验并对结果进行分析。其中7例患儿在原发病病情稳定后停用泼尼松，停药半年后应用0.1 U/(kg·d)的rhGH治疗6～12个月，对其疗效和安全性进行分析。结果 12例患儿在泼尼松治疗期间生长速度明显减慢，平均为(1.2±0.3)cm/年，显著低于泼尼松治疗前的(3.7±1.2)cm/年(P<0.05)。其中10例患者行2项hGH兴奋试验hGH峰值均小于10 ng/ml。泼尼松疗程>12个月的患儿hGH分泌异常发生率明显高于疗程为6～12个月的患儿(P<0.05)。泼尼松剂量为0.5～1.0 mg/(kg·d)与剂量为1.0～2.0 mg/(kg·d)的患儿hGH分泌异常的发生率差异无统计学意义(P>0.05)。7例应用rhGH治疗的患儿治疗半年后其生长速度由(2.2±0.1)cm/年增加到(7.8±0.5)cm/年(P<0.05)，治疗1年后的生长速度为(6.9±0.4)cm/年。结论 长期使用泼尼松治疗能抑制患儿的hGH分泌，从而影响患儿的生长发育。对于病情稳定后停用泼尼松治疗的患儿，应用rhGH治疗可以安全有效地增加患儿的线性生长速度，改善其生长发育状况。

关键词： 肾上腺皮糖质激素 儿童 青少年 人生长激素 重组人生长激素 矮小

Abstract: Objective Long term glucocorticoid (prednisolone) treatment on human growth hormone (hGH) secretion in children and adolescents and to investigate the effectiveness and safety of the recombinant human growth hormone (rhGH) treatment. Methods Twelve patients (age: 10.4±1.2 years) who were treated in Peking Union Medical College Hospital from September 1999 to November 2009 were enrolled in this study. All of them had taken prednisolone with a dose of 0.5±2.0 mg/(kg·d) for 6~18 months. Two different hGH stimulating tests was done and their growth and development was evaluated at regular intervals. Seven patients were given rhGH with a dose of 0.1 U/(kg·d) for 6~12 months to improve their growth and development after half a year of prednisolone withdrawal when their disease conditions were improved. Results The growth speed of these 12 children decreased significantly during prednisolone treatment compared with before prednisolone treatment (1.2±0.3 cm/year vs.3.7±1.2 cm/year,P<0.05). Plasma hGH was under 10 ng/ml in 10 patients in two hGH exciting experiments. The abnormality of hGH secretion was significantly more remarkable in those with a prednisolone treatment course of >12 months than those with a 6~12 months course (P<0.05). However, no such significant difference was found between those with prednisolone dose of 0.5~1.0 mg/(kg·d) and those with 1.0~2.0 mg/(kg·d) (P>0.05). The growth speed of seven children who received rhGH therapy for half a year were increased from 2.2±0.1 cm/year to 7.8±0.5 cm/year (P<0.05), and then to 6.9±0.4 cm/year one year later. Conclusions The long-term glucocorticoid treatment can decrease the hGH secretion, and thus leads to short stature and agenesis. However, the rhGH replacement can safely and effectively improve growth and development in these children after their primary diseases are improved and glucocorticoids are withdrawn.

Keywords: glucocorticoid children adolescent human growth hormone recombinant human growth hormone short stature

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