

论著

特发性弱精子症患者精子DNA氧化损伤

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摘要:

目的:探讨特发性弱精子症患者精浆的氧化应激及其精子DNA的氧化损伤。**方法:**选择2010年12月至2011年3月就诊于中南大学湘雅医院生殖中心门诊的不孕不育夫妇。以28名特发性弱精子症患者为实验组,选取24名精液分析正常且有生育史的男性为对照组,收集新鲜精液。应用鲁米诺化学发光法检测原始精浆活性氧(reactive oxygen species, ROS)水平;酶联免疫分析法检测精子DNA氧化产物8-羟基脱氧鸟苷(8-hydroxy-2'-deoxyguanosine, 8-OHdG)浓度。**结果:**1) 实验组精浆ROS水平增高,与对照组比较差异有统计学意义($P < 0.01$);两组前向运动精子活动率与精浆ROS水平呈负相关($r = -0.72, P < 0.01$)。2) 实验组精子8-OHdG浓度高于对照组,差异有统计学意义($P < 0.01$);两组前向运动精子活动率与精子8-OHdG浓度也呈负相关($r = -0.73, P < 0.01$)。3) 两组患者精浆ROS水平与精子8-OHdG浓度呈正相关($r = 0.77, P < 0.01$)。**结论:**特发性弱精子症患者的精子具有DNA氧化损伤,可能与氧化应激有关。过量活性氧产生可能是特发性弱精子症患者精子活力低下的原因之一。

关键词: 特发性弱精子症 氧化应激 8-羟基脱氧鸟苷 活性氧

Sperm DNA oxidative damage in patients with idiopathic asthenozoospermia

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Abstract:

Objective: To discuss seminal plasma oxidative stress and sperm DNA oxidative damage in patients with idiopathic asthenozoospermia. **Methods:** Infertile couples were selected from the clinic outpatients of the Reproductive Center of Xiangya Hospital, Central-South University from December 2010 to March 2011. Fresh semen of 28 men with idiopathic asthenozoospermia was collected as an experiment group, and 24 fertile men with normal semen and normal reproductive history served as a control group. Level of reactive oxygen species (ROS) in the seminal plasma was assessed with luminer chemiluminescence method. Density of sperm DNA oxidation product 8-hydroxy-2'-deoxyguanosine (8-OHdG) was assessed with enzyme linked immunosorbent assay. **Results:** 1) ROS level in the experiment group was higher than that in the control group ($P < 0.01$). There was negative correlation between the percentage of progressive motility spermatozoa and the ROS level in the seminal plasma in the 2 groups ($r = -0.72, P < 0.01$). 2) Density of sperm 8-OHdG in the experiment group was higher than that in the control group ($P < 0.01$). There was negative correlation between the percentage of progressive motility spermatozoa and the density of sperm 8-OHdG ($r = -0.73, P < 0.01$). 3) There was positive correlation between the ROS level in the seminal plasma and the density of sperm 8-OHdG ($r = 0.77, P < 0.01$). **Conclusion:** There is sperm DNA oxidative damage in patients with idiopathic asthenozoospermia, which may be related with the oxidative stress. Excessive generation of reactive oxygen species may be a cause of low sperm motility in patients with idiopathic asthenozoospermia.

Keywords: Idiopathic asthenozoospermia oxidative stress 8-hydroxy-2'-deoxyguanosine reactive oxygen species

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