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白血病患者外周血淋巴细胞微核分析

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摘要：

目的：应用微核分析技术检测初诊白血病患者的遗传损伤。方法：应用细胞周期阻断法检测54例初诊白血病患者(CML 11例，AML-M1 7例，AML-M2 6例，AML-M3 4例，AML-M4 2例，AML-M5 4例，AML-M6 2例，ALL 18例)和30例健康人外周血，以微核率(micronucleus rate，MNR)、微核细胞率（micronucleus cell rate，MCR）、核芽(nuclear bud，Bud)率、核质桥(nucleoplasmic bridge，NPB)率、核分裂指数(nucleus division index，NDI)、凋亡细胞(apoptotic cells，AC)率结合染色体中期分析、融合基因和基因重排检测作为染色体损伤指标分析初诊白血病患者的遗传损伤。结果：54例初诊白血病患者外周血的MNR\[（17.368±1.305）‰ vs（7.368±0.844）‰\]、MCR\[（15.418±1.212）‰ vs（5.887±1.101）‰\]、Bud率\[（8.142±0 132）% vs（0.404±0.404）%\]、NPB率\[（5.724 ±0.874）% vs（0.034±0.034）%\]、NDI\[（1.722±0.062）% vs（2.282±0 324）%\]、AC率\[（2.167±0.333）% vs（0.167±0.667）%\]、异常染色体检出率(24.00%)、融合基因或基因重排阳性率(18.00%)均明显异于健康人（P<0.05或P<0.01）。结论：白血病患者发病初期即有不同程度的遗传损伤，提示染色体不稳定造成的遗传损伤与白血病发病密切相关。

关键词：微核 白血病 细胞周期阻断法 遗传损伤

Analysis of micronucleus in peripheral blood lymphocytes of leukemia patients

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Abstract:

Objective:To study the genetic damage of preliminarily diagnosed leukemia patients by micronucleus analysis technology. Methods: Peripheral blood of 54 preliminarily diagnosed leukemia patients (11 CML patients, 7 AML-M1 patients, 6 AML-M2 patients, 4 AML-M3 patients, 2 AML-M4 patients, 4 AML-M5 patients, 2 AML-M6 patients, and 18 ALL patients) and 30 healthy volunteers were collected and examined by cell cycle block test. The genetic damages of patients were assessed by micronucleus rate (MNR), micronucleus cell rate (MCR), nuclear bud (Bud) frequency, nucleoplasmic bridge (NPB) frequency, nuclear division index (NDI), and apoptotic cell (AC) rate combined with chromosome metaphase, gene fusion and gene rearrangement analysis. Results: The chromosome damages in 54 leukemia patients were significantly different from those in the 30 healthy volunteers, with MNR being (17.368±1.305) ‰ vs (7 368±0.844) ‰, MCR being (15.418±1.212) ‰ vs (5.887±1.101) ‰, Bud frequency being (8.142±0 132)% vs (0.404±0.404)%, NPB frequency being (5.724±0.874)% vs (0.034±0.034)%, NDI being (1.722± 0.062)% vs (2.282±0.324)%, AC rate being (2.167±0.333)% vs (0.167±0.667)%, abnormal chromosome detection rate being 24.00%, gene fusion or gene rearrangement positive rate being 18.00% (P<0.05 or P<0 01). Conclusion: Leukemia patients show different degrees of inheritance chromosome damages in the initial stage, indicating that the inheritance damage caused by chromosomal instability is related to leukemia pathogenesis.

Keywords:micronucleus leukemia cell cycle block test genetic damage

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