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钙镁合剂预防奥沙利铂所致神经毒性的系统评价和Meta分析

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Systematic Review and Meta-analysis of Intravenous Ca/Mg Mixtures for the Prevention of Ox -aliplatin-induced Neurotoxicity

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摘要 目的：评价静脉钙镁合剂对奥沙利铂所致的神经毒性的预防作用。方法：查找使用奥沙利铂为基础的化疗方案，并对比钙镁合剂和安慰剂预防神经毒性的随机对照研究。采用随机或者固定效应模型对资料进行Meta 分析。结果：共纳入16个临床研究，981 例患者。Meta 分析显示钙镁合剂较安慰剂在预防奥沙利铂所致神经毒性上差异有统计学意义，包括神经毒性的发生（P<0.000 01）和>I 度的神经毒性（P<0.000 01）。 亚组分析表明：钙镁至少均>1 g 的合剂对预防奥沙利铂所致神经毒性有效。钙镁合剂与谷胱甘肽联合使用与安慰剂相比差异有统计学意义。结论：钙镁合剂能有效预防奥沙利铂所致神经毒性，与谷胱甘肽联合可能增加疗效。

关键词： 奥沙利铂 钙镁合剂 神经毒性 系统评价 Meta 分析

Abstract: Objective:The study aimed to assess the effects of an intravenous calcium/magnesium (Ca/Mg) mixture for preventing oxaliplatin-induced neurotoxicity. Methods:We identified randomized and controlled clinical trials comparing intravenous Ca/Mg with placebos based on their ability to prevent oxaliplatin-induced neurotoxicity in cancer patients who received oxaliplatin-based therapy. Meta-analyses were performed on the homogeneous studies. Fixed or random-effect models were used to combine the data.Results:Based on the outcomes of 981 patients, 16clinical trials were identified to meet the inclusion criteria. The meta-analyses showed statisticall significant differences in favor of Ca/Mg for preventing oxaliplatin-induced neurotoxicity, including the incidence (P<0.000 01) and severity (P<0.000 1) of neurotoxicity, as compared with the placebos. According to the subgroup analyses of the Ca/Mg dosage, both calcium gluconate (1 g) and magnesium sulfate (1 g) before and after oxaliplatin infusion as well as the accumulated dose were significantly different as compared with the placebos. In our analyses, 13 out of all 16 trials involved the FOLFOX (folinic acid – fluorouracil – oxaliplatin) regimen, whereas the remaining 3 trials used other oxaliplatin-based regimens. The FOLFOX regimen and other oxaliplatin-based regimens showed statistically significant differences in favor of Ca/Mg for preventing oxaliplatin-induced neurotoxicity as compared with the placebos. When combined with glutathione, the prevention of oxaliplatin-induced neurotoxicity was more significant (P<0.000 1). Conclusion:Ca/Mg infusion is useful for preventing oxaliplatin-induced neurotoxicity and should be considered an integral part of oxaliplatin-based chemotherapy regimen. Both calcium gluconate (1 g) and magnesium sulfate (1 g) before and after oxaliplatin infusion, as well as accumulated doses that exceeded the required dose, could effectively prevent oxaliplatin-induced neurotoxicity. Glutathione likewise enhanced the preventive effects of the Ca/Mg infusion.

Key words: Oxaliplatin Calcium/magnesium (Ca/Mg) mixtures Neurotoxicity Systematic review Meta-analysis

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