基于IDH1基因检测联合体外药敏试验的恶性脑胶质瘤个体化综合治疗的疗效评价

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Title: **Evaluation of individualized comprehensive treatment efficacy of IDH1 gene detection combined with external drug sensitivity test for malignant brain gliomas**

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摘要: 目的：研究恶性脑胶质瘤患者异柠檬酸脱氢酶-1（isocitrate dehydrogenase-1，IDH1）突变状态与体外药敏试验结果相关性，以及基于二者的恶性脑胶质瘤患者个体化综合治疗的疗效评价。方法：选择术后病理确诊为恶性脑胶质瘤的患者67例，用Sanger测序法检测IDH1基因突变状态，并取其新鲜标本采用胶滴肿瘤药敏检测技术（CD-DST法）进行体外药敏试验，分析二者之间关联性。根据是否按照体外药敏实验结果进行规范疗程的化疗，将患者分为个体化治疗组和非个体化治疗组，比较两组患者临床疗效。结果：67例患者中，IDH1基因突变者14例，未突变者53例，IDH1基因突变患者卡莫司汀（BCUN）、依托泊苷（VP-16）、替莫唑胺（TMZ）体外药敏试验敏感性高于IDH1野生型患者，差异具有统计学意义（P<0.05）。IDH1基因突变患者中位生存期为30个月，IDH1野生型患者为14个月，差异具有统计学意义（P<0.05）。个体化治疗组患者中位生存时间为22个月，非个体化治疗组患者中位生存时间为14个月，差异具有统计学意义（P<0.05）。IDH1基因突变并行个体化治疗亚组中位生存时间为32个月，明显长于其他亚组，差异具有统计学意义（P<0.05）。结论：IDH1基因检测联合体外药敏试验指导恶性脑胶质瘤患者的个体化综合治疗能获得较好的临床疗效。

Abstract: Objective：To study the correlation between the mutational status of isocitrate dehydrogenase-1（isocitrate dehydrogenase-1，IDH1) and the results of in vitro drug sensitivity test in patients with malignant gliomas and to evaluate the efficacy of the two methods in individual chemotherapy of malignant gliomas.Methods：Sanger sequencing was used to detect the mutation status of IDH1 in 67 patients with malignant glioma diagnosed by pathology after operation，and the drug sensitivity test in vitro was performed by colloidal drop tumor susceptibility assay（CD-DST) in fresh samples.Then analyze the relationship between them.Patients were divided into individualized treatment group and non-individualized treatment group according to whether conduct chemotherapy individually and standardly by the result of the drug sensitivity test or not.Results：Among the 67 patients，14 had mutation of IDH1 gene and 53 had not.The drug sensitivity of BCUN，VP-16 and TMZ in mutant-type was higher than that of wild-type IDH1 patients by in vitro.The difference was statistically significant（P<0.05).The median survival time of IDH1 mutation patients was 30 months and that of IDH1 wild type patients was 14 months.The difference was statistically significant（P<0.05).The median survival time of individualized treatment patients was 22 months and that of non-individualized treatment group was 14 months.The difference was statistically significant（P<0.05).The median survival time of IDH1 mutation combined with individualized treatment subgroup was 32 months，which was significantly longer than that of other subgroups.The difference was statistically significant（P<0.05).Conclusion：The combination of IDH1 gene detection and external drug sensitivity test to guide individual comprehensive treatment in patients with malignant brain glioma can obtain better clinical effect.

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