

尼莫地平与腰大池引流术联合应用对颅内动脉瘤夹闭术后患者脑氧饱和度及并发症的影响

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Title: Effect of nimodipine combined with lumbar cisterna drainage on cerebral oxygen saturation in patients undergoing intracranial aneurysm clipping and amplications

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关键词: 尼莫地平; 腰大池引流术; 颅内动脉瘤夹闭术; 脑氧饱和度; 基质金属蛋白酶-9; 可溶性细胞间黏附分子-1; 可溶性血管细胞黏附分子-1

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摘要: 目的: 探究尼莫地平与腰大池引流术 (lumbar cisterna drainage, LD) 联合应用对颅内动脉瘤夹闭术后患者脑氧饱和度、血清基质金属蛋白酶-9 (MMP-9)、可溶性细胞间黏附分子-1 (sICAM-1)、可溶性血管细胞黏附分子-1 (sVCAM-1) 水平的影响。方法: 将于我院行颅内动脉瘤夹闭术治疗的60例颅内动脉瘤 (cerebral aneurysm, CA) 患者随机分为观察组与对照组, 各30例。两组均微量泵输注30 mg/d尼莫地平, 对照组行腰椎穿刺, 观察组行LD, 比较两组大脑中动脉血流速度 (VMCA)、脑脊液压力及脑脊液中红细胞计数 (RBC), 记录不同时间节点脑氧供需指标及脑氧饱和度 (rSO₂), 比较MMP-9、sICAM-1、sVCAM-1水平、CVS及颅内感染发生率、美国国立卫生院神经功能缺损评分 (NIHSS评分)。结果: 术后1周至术后2周, 两组VMCA水平呈先升高再降低趋势, 而脑脊液压力及RBC水平持续降低, 且观察组显著低于对照组 (P<0.05); T₁至T₄阶段, 两组SjvO₂、CjvO₂、CaO₂呈先升高后降低再升高趋势, 且T₂、T₃时间点观察组显著高于对照组 (P<0.05); T₁至T₄阶段, 两组Ca-jvO₂、CERO₂呈先降低后升高再降低趋势, 且T₂、T₃时间点观察组显著低于对照组 (P<0.05); T₂至T₄阶段, 两组rSO₂呈先升高再降低趋势, 且T₂、T₃时间点观察组显著高于对照组 (P<0.05); 术后1周及术后2周, 观察组MMP-9及sICAM-1、sVCAM-1水平及CVS发生率、NIHSS评分显著低于对照组 (P<0.05), 但颅内感染组间差异无统计学意义 (P>0.05)。结论: CA患者颅内动脉瘤夹闭术后给予尼莫地平联合LD, 于改善患者脑氧供需平衡及脑氧饱和度、降低CVS风险、减轻脑损伤及颅内炎症有重要价值。

Abstract: Objective: To investigate the effect of nimodipine combined with lumbar cistern drainage(LD) on cerebral oxygen saturation, serum matrix metalloproteinase-9(MMP-9), soluble intercellular adhesion molecule-1(sICAM-1) and soluble vascular cell adhesion molecule-1(sVCAM-1) levels in patients undergoing intracranial aneurysm clipping.Methods: Sixty patients with cerebral aneurysm (CA) who underwent intracranial aneurysm clipping in the hospital were randomly divided into observation group and control group, 30 cases in each group.Both groups were infused with 30 mg/d of nimodipine through micro-pump.The control group was treated by lumbar puncture and the observation group was treated by LD.The blood flow velocity of middle cerebral artery(VMCA), cerebrospinal fluid pressure and red blood cell count(RBC) in cerebrospinal fluid were compared between the two groups.Cerebral oxygen supply and demand indicators and cerebral oxygen saturation(rSO₂) at different time points were recorded.Levels of MMP-9, sICAM-1 and sVCAM-1, incidence of CVS and intracranial infection and National Institutes of Health Stroke Scale score(NIHSS score) were compared.Results: Levels of VMCA increased firstly and then decreased from 1 week to 2 weeks after operation, while cerebrospinal fluid pressure and RBC continued to decrease, and they were lower in the

observation group than the control group($P<0.05$).The SjvO₂, CjvO₂ and CaO₂ in both groups increased firstly, then decreased and then increased from T1 to T4, and they were significantly higher in the observation than the control group at T2 and T3($P<0.05$).The Ca-jvO₂ and CERO₂ in both groups decreases firstly, then increased and then decreased from T1 to T4, and they were significantly lower in the observation than the control group at T2 and T3($P<0.05$).The rSO₂ in both groups increased firstly and then decreased from T2 to T4, and it was significantly higher in the observation than the control group at T2 and T3($P<0.05$).Levels of MMP-9, sICAM-1 and sVCAM-1, incidence of CVS and NIHSS scores in the observation group were significantly lower than those in the control group at 1 week and 2 weeks after operation($P<0.05$), but there was no significant difference in the incidence of intracranial infection($P>0.05$).Conclusion: The treatment with nimodipine combined with LD for patients with CA after intracranial aneurysm clipping is of great value in improving cerebral oxygen supply and demand balance and cerebral oxygen saturation, reducing the risk of CVS and relieving brain injury and intracranial inflammation.

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