

Effects of colloid preload on placenta stereology and cord blood S100B protein during cesarean section under spinal anesthesia(点击查看pdf全文)

《南方医科大学学报》 [ISSN:/CN:] 期数: 2013年02期 页码: 161 栏目: 出版日期: 2013-02-01

Title: 胶体预冲量对剖宫产脐血S100B蛋白及胎盘体视学的影响

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关键词: 剖宫产; 腰椎麻醉; 低血压; 体视学; 血清S100B; 容量预充

Keywords: cesarean section; spinal anesthesia; maternal hypotension; stereology; S100B protein; volume preload; colloid preload

分类号: -

DOI: -

文献标识码: -

摘要: 目的通过比较不同预充量佳乐施对脐带血血气、脐带血血清S100B浓度及胎盘体视学的影响, 观察佳乐施对剖宫产产妇
脊椎麻醉低血压的防治效果并探索对母体和胎儿均有利的预充量。方法
将45例择期行剖宫产术的单胎足月初产妇随机分为
I、II、III组 (n=15), 麻醉前分别以5、10、15 ml · kg⁻¹ · h⁻¹的速度
预充佳乐斯10 min, 之后开始麻醉手术并以此补液速度持续至胎
儿娩出。监测并记录麻醉前 (T0)、麻醉后1 min (T1)、2 min
(T2)、3 min (T3)、5 min (T4)、10 min (T5)、胎儿娩出时
(T6) 及术毕 (T7)
时血压、心率的变化。比较3组新生儿1 min及5 min的Apgar评分, 脐带
血血气变化及脐带血血清S100B浓度。观察胎盘石蜡
切片并用体视学方法分析出胎盘绒毛微血管长度密度和体积密度的变
化。结果3组产妇心率、收缩压比较差异皆无统计学意
义 (P>0.05), 组内各时点差异有统计学意义 (P<0.05); II、III组较
I组母体血流动力学更稳定。3组脐动脉血血气、新生儿Apgar
评分及脐带血血清S100B浓度比较无统计学意义 (P>0.05), 胎盘绒毛
微血管长度密度和体积密度也没有统计学差异 (P>0.05)。
结论 II、III组预充量较 I组对低血压有更好的缓冲作用, 但考虑到产妇
心脏负荷较重, 推荐以10 ml · kg⁻¹ · h⁻¹的速度从术前
10 min开始扩容至胎儿娩出, 对母婴更安全有利。

Abstract: Objective To determine the optimal dose of colloid preload, which
is both safe and effective, for preventing
hypotension in parturients undergoing cesarean section under
spinal anesthesia. Methods Forty-five healthy, termed

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parturients scheduled for cesarean delivery under spinal anesthesia were randomly assigned to 3 colloid preload groups to receive gelofusine infusion at the rates of 5, 10, or 15 ml • kg⁻¹ • h⁻¹ (groups I, II, and III, respectively). Colloid preload was administered 10 min before spinal anesthesia and maintained until the delivery. Blood pressure (BP) and heart rate (HR) of the parturients were monitored during the operation, and Apgar scores at 1 and 5 min after birth were recorded. S100β protein concentration and blood gas values of the umbilical artery were also measured. The vascular adaptation in the placental villous capillary was evaluated stereologically. Results At each time point of measurement, BP and HR showed no significant differences among the 3 groups during the operation (P>0.05), but within the same group, BP and HR underwent significant variations during the operation; groups II and III maintained more stable hemodynamics compared to group I. Apgar scores and blood gas analysis, pH value, and S100β protein in the umbilical artery showed no significant differences among the 3 groups (P>0.05). The 3 groups exhibited no significant differences in the length and volume density of the placental villous capillaries (P>0.05). Conclusion Colloid preload with gelofusine administered at the rate of 10 ml • kg⁻¹ • h⁻¹ can reduce the incidence and severity of hypotension in cesarean section under spinal anesthesia with the least adverse maternal and fetal effects.

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