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昼夜节律对丙泊酚麻醉深度的影响

Influence of Circadian Rhythm on Depth of Propofol Anesthesia

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中文摘要:

目的 研究昼夜节律对丙泊酚全麻诱导时麻醉深度的影响。方法 选择白天组(8:00~12:00)和夜间组(22:00~2:00)全麻手术患者各30例, 年龄20~45岁, ASA I级, 无睡眠障碍。丙泊酚靶控效应室浓度自 $1.0 \mu\text{g} \cdot \text{mL}^{-1}$ 开始, 每次增加 $0.5 \mu\text{g} \cdot \text{mL}^{-1}$ 直至 $3.0 \mu\text{g} \cdot \text{mL}^{-1}$ 。静注咪唑安定 $0.05 \text{mg} \cdot \text{kg}^{-1}$ 、芬太尼 $5 \mu\text{g} \cdot \text{kg}^{-1}$ 、顺式阿曲库铵 $0.15 \text{mg} \cdot \text{kg}^{-1}$, 3 min后行气管插。依次记录靶控输注前(T_0)及各效应室浓度平衡2 min后($T_1: 1.0 \mu\text{g} \cdot \text{mL}^{-1}$ 、 $T_2: 1.5 \mu\text{g} \cdot \text{mL}^{-1}$ 、 $T_3: 2.0 \mu\text{g} \cdot \text{mL}^{-1}$ 、 $T_4: 2.5 \mu\text{g} \cdot \text{mL}^{-1}$ 、 $T_5: 3.0 \mu\text{g} \cdot \text{mL}^{-1}$)及插管前(T_6)各时点的BIS值、平均动脉压、心率。结果 夜间组患者在 T_3 、 T_4 、 T_5 、 T_6 时其BIS值明显低于白天组患者($P < 0.05$)。在诱导期间平均动脉压和心率随麻醉的加深而降低, 组间差异均无统计学意义($P > 0.05$)。结论 昼夜节律对丙泊酚麻醉深度有明显的影响, 相同效应室浓度下夜间镇静程度比白天深。

英文摘要:

OBJECTIVE To investigate the influence of circadian rhythm on anesthesia depth of propofol. METHODS Patients undergoing general anesthesia within 8:00~12:00 or 22:00~2:00 were chosen as day group and night group ($n=30$ each group). All the patients aged 20~45 years without sleep disorder. Anesthesia was induced with propofol delivered by target controlled infusion(TCI). The initial effect-site concentration of propofol was set at $1.0 \mu\text{g} \cdot \text{mL}^{-1}$, and increased step-by-step with $0.5 \mu\text{g} \cdot \text{mL}^{-1}$ after

having balanced for 2 min until reached $3.0 \mu\text{g} \cdot \text{mL}^{-1}$. And then patients were injected with midazolam $0.05 \text{ mg} \cdot \text{kg}^{-1}$, fentanyl $5 \mu\text{g} \cdot \text{kg}^{-1}$ and cisatracurium $0.15 \text{ mg} \cdot \text{kg}^{-1}$ by intravenous before tracheal intubation. The bispectral index(BIS), MAP and HR values were recorded before propofol infused(T_0), at each effect-site concentration of propofol ($T_1: 1.0 \mu\text{g} \cdot \text{mL}^{-1}$; $T_2: 1.5 \mu\text{g} \cdot \text{mL}^{-1}$; $T_3: 2.0 \mu\text{g} \cdot \text{mL}^{-1}$; $T_4: 2.5 \mu\text{g} \cdot \text{mL}^{-1}$; $T_5: 3.0 \mu\text{g} \cdot \text{mL}^{-1}$) and before tracheal intubation(T_6). RESULTS The BIS values were significantly lower at T_3 , T_4 , T_5 and T_6 in night group compared with day group ($P < 0.05$). The MAP and HR were gradually decreased when induction, but without significant difference between the two groups($P > 0.05$). CONCLUSION Circadian rhythm may have remarkable effect on the depth of propofol anesthesia, and it is more potent when administered at night.

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