

Effects of remifentanil pretreatment on sufentanil-induced cough suppression during the induction of general anesthesia

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January 30, 2023

Abstract

Aims: This study aimed to evaluate the effect of remifentanil pretreatment on sufentanil-induced cough (SIC) during general anesthesia induction. **Methods:** A total of 120 patients who were scheduled for elective surgery were equally randomized into two groups (n=60 each). Patients in R group received 0.5 $\mu\text{g}/\text{kg}$ remifentanil and N group received same volume of normal saline 1 minute before sufentanil (0.5 $\mu\text{g}/\text{kg}$) intravenous injection. Remifentanil and sufentanil were diluted to 5ml and then administered to patients in both R and N groups within 5 seconds. Then midazolam, etomidate and rocuronium bromide were given to facilitate tracheal intubation. The incidence and severity of cough in both groups were recorded within 2 minutes after sufentanil administration during general anesthesia induction. The mean arterial pressure (MAP), heart rate (HR), and pulse oxygen saturation (SpO₂) were recorded at T1 (before the injection of remifentanil or normal saline), T2 (1 minute after remifentanil administration), T3 (before intubation) and T4 (1 minute after intubation). Additionally, the incidences of adverse events, including dizziness, nausea, apnea, truncal rigidity, bradycardia or other adverse effects were also recorded. **Results:** The incidence of SIC in R group was significantly decreased when compared with N group (3.33% vs 35.00%, respectively; $P < 0.001$). No statistical differences were found in MAP, HR, SpO₂, and the incidences of other side effects between two groups at T1, T2, T3, and T4 ($P > 0.05$). **Conclusion:** Pretreatment with remifentanil 0.5 $\mu\text{g}/\text{kg}$ can effectively and safely suppress the incidence and severity of sufentanil-induced cough.

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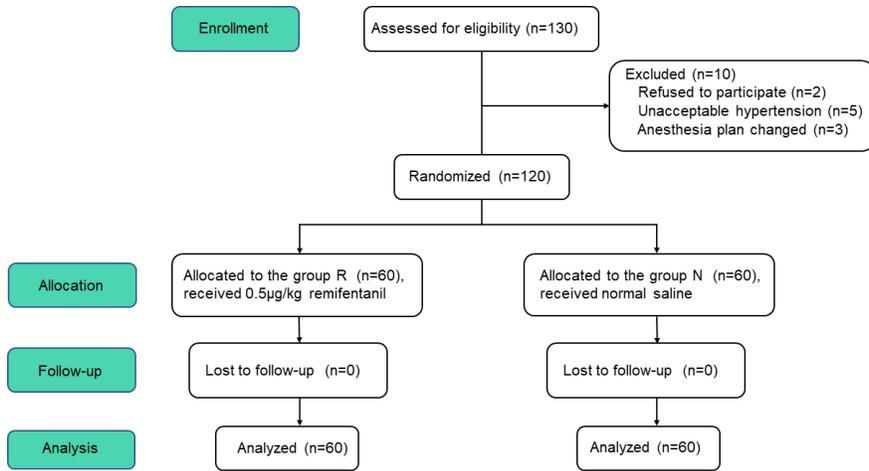


Figure 1 Flow of patients participating in this study.

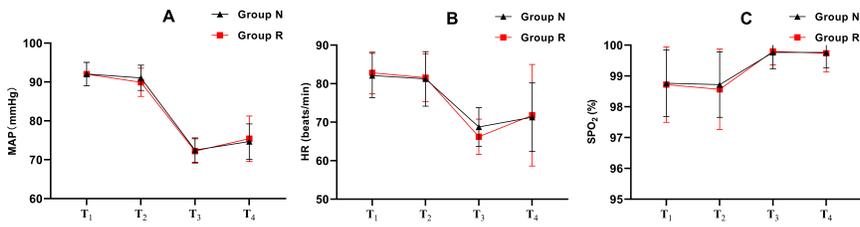


Figure 2 The MAP, HR, and SpO2 between two groups at T1, T2, T3, and T4 (A-C). No significant differences were found in MAP, HR, RR, and SpO2 between group R and group N at T1, T2, T3, and T4.

Abbreviations: N; normal saline; R; remifentanyl; MAP, mean arterial pressure; HR, heart rate; SpO₂, pulse oxygen saturation.