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Comment on "The Effect of Nitroglycerine Infusion on Postoperative Pain in Lower Limb Surgery: A Clinical Double-Blind Study"

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Dear Editor,

We had this chance to read the valuable article entitled "The Effect of Nitroglycerine Infusion on Postoperative Pain in Lower Limb Surgery: A Clinical Double-Blind Study" published by Rahimzadeh et al. (1). This is a well-designed study that emphasized a novel strategy regarding pain management in postoperative settings. The authors prepared three stock formulations of fentanyl and nitroglycerin and subsequently administered them via infusion pumps. These three formulations were as follows:

A) Fentanyl 10 mc/kg + 10 mL distilled water + 100 mL normal saline;

B) Fentanyl 10 mc/kg + nitroglycerin 500 mc diluted in 10 mL distilled water and then diluted with 100 mL normal saline;

C) Fentanyl 10 mc/kg + nitroglycerin 1000 mc diluted in 10 mL distilled water and then diluted with 100 mL normal saline.

They started infusion right after the operation and followed patients for 48 hours after surgery. The authors found that nitroglycerine, as an adjuvant agent, could be added to intravenous fentanyl in patients undergoing surgery for better pain control. However, the authors did not consider the compatibility and stability of the prepared mixtures. The compatibility and stability of intervening agents are important, especially in intensive care units where patients must receive several intravenous medicines. This can be easily prevented through checking by online databases such as the handbook on injectable drugs or Lexi intravenous compatibility database (2). According to these databases, the mixture of fentanyl at a concentration of 50 μg/mL and nitroglycerin at a concentration of 0.2 mg/mL is visually compatible for up to 24 hours at 24°C. Also, the mixture of fentanyl at a concentration of 0.05 mg/mL and nitroglycerin at a concentration of 0.4 mg/mL is visually compatible for up to 4 hours at 27°C. All mixtures also should be diluted with dexterous water 5% (3). On the other hand, nitroglycerin is a sensitive medicine in terms of stability and physical condition can easily affect its potency (4). Hence, in conclusion, it was better to evaluate the compatibility and stability of prepared stock mixtures after 24 hours. Alternatively, they could prepare fresh solutions instead of preparing stock solutions. Checking the compatibility and stability with online databases is also recommended before all these strategies.

Footnotes

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