

Total Intravenous Anaesthesia Using 3-in-1 Mixture of Propofol, Alfentanil and Mivacurium

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Abstract

Introduction: To avoid errors and confusion associated with 3 separate infusions, we conducted a feasibility study of total intravenous anaesthesia (TIVA) using 1 electrically-powered syringe pump to deliver a 3-in-1 mixture containing fixed proportions of propofol, alfentanil and mivacurium. **Materials and Methods:** The 3-in-1 mixture was obtained by mixing 200 mg propofol, 1 mg alfentanil, 20 mg mivacurium, and making up to 40 mL with 5% dextrose solution. Electrical zone sensing sizer and light microscopy were used to compare emulsion instability of the 3-in-1 with control mixtures. In 50 ASA I patients, bolus infusions of 0.4 mL of the 3-in-1 mixture per kg body weight were given for induction of anaesthesia. All patients were subsequently intubated and ventilated with air-oxygen mixtures. Anaesthesia was maintained using a continuous infusion of the 3-in-1 mixture with the infusion rate titrated to satisfactory clinical response. Intravenous morphine 0.1 mg/kg was given for intra- and postoperative analgesia. Residual neuromuscular blockade was reversed using glycopyrronium and neostigmine at the end of surgery. **Results:** The 3-in-1 mixtures remained stable for up to 5 hours after preparation. Induction and maintenance of anaesthesia were smooth, intubation conditions satisfactory, and intraoperative haemodynamic changes acceptable. Recovery from anaesthesia and neuromuscular blockade was rapid. There were no major intra- or immediate postoperative complications. **Conclusions:** The 3-in-1 mixtures remained stable for up to 5 hours after preparation. It may be feasible to provide TIVA using the 3-in-1 mixture for induction and maintenance of anaesthesia in ASA I patients.

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