

Effect of temperature and cardiopulmonary bypass on the pharmacokinetics of remifentanil

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Abstract:

Sixteen patients undergoing coronary revascularization requiring cardiopulmonary bypass received remifentanil 2 micrograms kg⁻¹ or 5 micrograms kg⁻¹ by infusion over 1 min after sternotomy but before commencing cardiopulmonary bypass, during hypothermic cardiopulmonary bypass and during cardiopulmonary bypass after rewarming. Hypothermic cardiopulmonary bypass reduced the clearance of remifentanil by an average of 20%, and this was attributed to the effect of temperature on blood and tissue esterase activity. Reductions in arterial pressure occurred with administration of both doses during normothermia only.