Intranasal alfentanil for severe intractable angina in inoperable coronary artery disease

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Abstract
Chronic refractory angina can lead to multiple acute hospital admissions. This can be due to patient and healthcare professional misconceptions regarding the meaning of the chest pain experienced. Symptom control, psychological support and education form an important part of the management of this condition. We describe a case study where intranasal alfentanil provided rapid relief of symptoms preventing repeated hospital admissions.

Keywords
alfentanil, administration, intranasal, angina pectoris, pain, intractable

Introduction
Severe diffuse inoperable coronary artery disease can lead to multiple acute hospital admissions with severe chest pain that is not responsive to conventional medications, and where there is no potential for coronary revascularization. Chronic refractory angina, as this condition is called, is becoming an increasingly common chronic pain condition. For patients with chronic refractory angina, symptom control, psychological support and education form an important part of their management which is often overlooked.

We suggest a potentially useful intervention whereby alfentanil nasal spray has been used effectively to provide rapid relief of severe chest pain associated with chronic refractory angina, enabling the patient to remain at home and prevent repeated hospital admissions.

Case history
A 72-year-old gentleman was admitted with a history of severe central chest pain typical of his angina pain, which had not responded to his nitrolingual spray or oral normal release morphine. He had a history of myocardial infarction in 1982 with four vessel coronary artery bypass grafting and redo, and a further angioplasty where five stents were inserted in 1997. A further angiogram on a later admission revealed only the left internal mammary artery graft to be patent, and he was not a candidate for further cardiac intervention. An electronic spinal cord stimulator was inserted in 2000. He had a history of depression and anxiety, and was under the care of the local community mental health team. The patient was aware that there was no further intervention possible, and was keen to remain at home. Despite titration of sustained release morphine and optimization of his antianginal medication he still experienced episodes of severe pain which he was unable to manage at home, as he found normal release morphine took too long to have an effect, and resulted in multiple acute admissions to hospital occurring approximately once a month. The patient was commenced on alfentanil nasal spray 5mg in 5ml with one spray delivered to each nostril providing a total of 280mcg of alfentanil. This was found to relieve the cardiac chest pain in less than five minutes. The patient has been using this approximately four to six times a week for six months with no signs of nasal irritation or adverse effects, and has had no acute hospital admissions in this time. The patient has subsequently been reviewed at the Refractory Angina
Centre in Liverpool which has further improved his quality of life and understanding of his disease.

Discussion

Intravenous administration of alfentanil has been used as an effective analgesic in the pre-hospital treatment of myocardial ischaemic pain according to the literature. Intranasal drug delivery holds some advantages over other parenteral routes when considering patient administered medication. The intranasal route of administration of opioids has been reported as being as effective as the intravenous route in the management of ‘severe’ postoperative pain in adults when using fentanyl. The nasal cavity has a rich vascular plexus providing an easily accessible entry directly into the bloodstream, avoiding first pass metabolism and promoting rapid absorption of the medication, and this route for administration of alfentanil has been found to have high bioavailability and a maximal concentration at 9 minutes.

It also holds advantages over some other parenteral routes in that there is no requirement for sterile technique or training for the patient compared to administering subcutaneous or intramuscular injections. The intranasal route also provides consistent dosing and good mucosal distribution compared to the sublingual route when it can be difficult to ensure total mucosal absorption rather than partial oral absorption.

The common misconceptions regarding chronic refractory angina amongst healthcare professionals and patients needs to be addressed alongside any attempts at symptom control. It is common for patients to have been told ‘your narrowings are just too far gone and there is nothing more that can be done’ and to equate further episodes of angina as ‘mini-heart attacks’. Unknown to many patients and clinicians, chronic refractory angina actually confers a good prognosis due to the formation of collateral blood vessels. It has been shown that addressing patients’ understanding, psychological issues and symptom control can improve patient’s symptoms, improve quality of life, and reduce hospital admissions through a chronic disease management programme using cognitive behavioural techniques.

This case study suggests that the use of intranasal alfentanil for chronic refractory angina may have a role in symptom control alongside patient education, psychological support and a cognitive behavioural approach for this chronic pain condition.

References