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UK Medicines Information
MIDLANDS

TRENT MEDICINES INFORMATION SERVICE

QIPP Detail Aid Support Document

Providing support for quality in prescribing

OXYCODONE – any better than morphine?

KEY MESSAGES

- **Oxycodone is a potent opioid analgesic with similar properties to morphine.**
- **Oxycodone is much more expensive than equivalent doses of morphine and should be generally reserved for second line use where morphine is not tolerated or unsuitable.**
- **Branded generics of oxycodone MR are now available. These are cheaper than Oxycontin® but still cost more than morphine. Use brand names for clarity when prescribing MR opioids.**
- **Mistakes have occurred in prescribing and dispensing of similar-sounding brand names of immediate release and modified release oxycodone, resulting in overdose.**
- **All opioids have the potential for abuse and/or diversion to illicit use.**

WHAT IS THE PROBLEM?

Oxycodone is a strong opioid similar to morphine. It has a comparable analgesic effect though it is around 1.5 times more potent.

The BNF gives the potency ratio of morphine: oxycodone as 1.5 to 1, although product literature for oxycodone (SPC for Oxynorm®) suggests a 2:1 ratio when converting patients from morphine to oxycodone. No information is provided on the ratio to use when switching patients away from oxycodone to other opioids.

….probably because it has better bioavailabililty than morphine.

The Palliative Care Formulary (PCF-4)[1] says that bioavailability of oxycodone is about 75%, and for morphine it is around half that.

However oxycodone costs several times more than morphine and at higher doses, up to six times as much. The highest strength of oxycodone MR costs over £3,900 for a year's supply (120mg twice daily).

See costs graph. Note this data is based on a 1 to 1.5 potency ratio for illustration purposes. Caution should always be used when titrating individual patient doses.

In the last year primary care in the East Midlands/South Yorkshire area spent over £4.9 million on oxycodone, with an average cost per item of over £47. If half of this had been prescribed as morphine, over £1.7m could have been available for other treatments.

Costs data and table (see below), figures exclude liquid formulations for clarity.

Total annual amounts of solid dose forms from prescribing data March 2013 to February2014. Savings estimates were based on an average price of morphine being 25% of the cost of oxycodone across the dose range (it actually varies from about 30% at lower doses to 15% at high doses, see costs chart).

Based on this information, if 80% of Oxycodone MR was prescribed as a cheaper branded generic such as Longtec®, over £300k could be saved across the East Midlands/ South Yorkshire area.

	Oxycodone capsules (immediate release)	Oxycodone MR tabs	TOTAL
Number of items	29,961	65,558	95,519
Total spend	£920,745	£3,652,254	£4,572,999
Average cost/item	£30.73	£55.71	£47.87
Potential saving if half of prescriptions were for morphine instead	£345,279	£1,369,595	£1,714,874
Potential saving if 80% of items of oxycodone 80mg and below replaced with cheaper oxycodone MR brand		£321,089	

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MAJOR CONSIDERATIONS

The BNF states that oxycodone has an efficacy and side effect profile similar to that of morphine. Traditional use of oxycodone has been as a strong opioid in palliative care (see NICE guidance), but its use in chronic non-cancer pain is increasing (recent SIGN guidance here).

There is little good evidence of efficacy of long term use of opioids to treat chronic non-malignant pain.[2] SIGN guidance has recently been released for management of chronic pain which confirms this.[3]

The Scottish Medicines Consortium (SMC) recommended that oxycodone prolonged release should be restricted to use in patients with severe non-malignant pain requiring a strong opioid analgesic in whom controlled release morphine sulphate is ineffective or not tolerated.[4]

The analgesic effect of oxycodone is similar to other strong opioids.

Oxycodone has been suggested to act on a different opioid receptor type to morphine (ie kappa- or k-receptors rather than mu receptors), though this is controversial according to the Palliative Care Formulary (PCF-4). However in practice the analgesic effect is similar to other strong opioids.[1]

It is available as liquid, immediate-release and modified release (twice daily) preparations.

See MIMS for details. Cost of liquid preparations is similar (but not identical to) cost of immediate release capsules.

Some of the names of these are similar which has led to prescribing and dispensing errors – for example Oxynorm® is immediate-release oxycodone and Oxycontin® a modified release product. Sudden death has been reported in a patient taking the MR product four times a day and over 800 incidents involving the drug were reported in a 2 year period from 2010 to 2012.[5]

See the CQC document[5] that describes a number of scenarios where there was confusion over brand names or oxycodone was taken inappropriately. A total of 801 incidents of harm to patients were reported.

There are now branded generics of oxycodone MR available (e.g. Longtec®); these are significantly cheaper than the originator brand (around 20-25% less) and these should be used in preference to the brand leader if oxycodone is considered preferable to morphine in an individual patient.

Longtec® costs about 20% less than Oxycontin® at lower doses and 25% less at strengths of 40mg and higher (see MIMS for details). Other generic brands are available.

There is significant potential for abuse and/or diversion of oxycodone. Great caution is needed when prescribing this to patients with a history of drug abuse and prescribers should be wary of unsolicited requests for the drug.

Illicit use of oxycodone involving crushing the tablets and then injecting or snorting the powder is widespread in the US. The manufacturers of the US product have modified the formulation so that it is less susceptible to this. The UK formulation in current use is not the abuse-resistant form.

Good practice guidance from the British Pain Society on prescribing opioids for persistent pain can be found here.

Approximate dose equivalents of oral morphine and oxycodone

These are based on the best available information that the ratio is about 1.5 to 1 (morphine:oxycodone). It may vary between indications, individual patients, and across the dose range. There is little data in non-cancer pain.

Note that patients should be monitored closely if there are any changes in dose or type of opioid they are taking. Prescribing information should be consulted before starting patients on strong opioids, use low doses initially, particularly in opioid-naïve patients.

Immediate Release Formulations	
Oxycodone 10mg 6 hourly	Morphine 10mg 4 hourly
Modified release preparations	
Oxycodone MR 10mg bd	Morphine MR (eg MST) 15mg bd; (Zomorph not possible)
Oxycodone MR 20mg bd	Morphine MR (eg Zomorph) 30mg bd
Oxycodone MR 40mg bd	Morphine MR (eg Zomorph) 60mg bd

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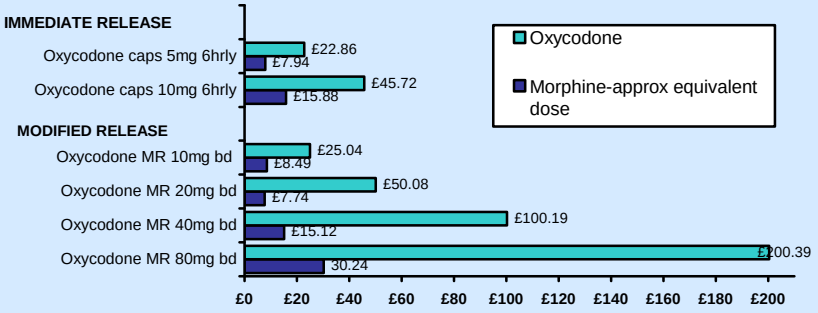
WHAT ARE THE COSTS? (28 days, MIMS online, May 2014)



Comparison of cost of oxycodone at each dose with approximate equivalent dose of morphine tablets or modified release (Zomorph®where possible). Prices for oxycodone MR are based on Oxycontin®.
Oxycodone liquid cost (not shown) is similar to that of immediate release capsules.
NB patients should be monitored closely if any changes in dose or formulation are made.

References

1. Twycross et al. Palliative care formulary PCF-4 PalliativeDrugs.com Ltd, 2011; p424 (oxycodone monograph).
2. Kissin I. J Pain Res 2013:6 513–529, accessed via http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3712997/pdf/jpr-6-513.pdf
3. SIGN guidance 136: Management of chronic pain (Dec 2013), accessed via http://www.sign.ac.uk/pdf/SIGN136.pdf, accessed May 2014
4. SMC 2005. Verdict on Oxycontin, accessed via this link, May 2014
5. Care Quality Commission (CQC). Safer use of Controlled Drugs - Preventing Harm From Oral Oxycodone Preparations, accessed via this link

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