Transdermal medicine patches and physiotherapy practice.

Transdermal patches using opioid medicines which are exposed to increased temperatures are linked to serious side effects in patients. This could include use in hydrotherapy pools or extreme exercise which may raise body temperature. Side effects may be life threatening including death, which is caused by the increased absorption of the opioid medicine at higher temperatures.

The British National Formulary (BNF), and the Summary of Product Characteristics (SPC) of opioid transdermal medicines provide general warnings of the side effects related to heat, but do not specifically mention hydrotherapy pools. Other medicines may be delivered transdermally e.g. nicotine replacement therapy (NRT) or hormone replacement therapy (HRT). The reported side effects of heat on the absorption of these medicines is limited.

Transdermal patch use and physiotherapy practice

- Opioid patches are licensed for the management of chronic intractable pain. Strong opioid medicines that may be used in transdermal patches include ‘fentanyl’ and ‘buprenorphine’. Common trade names are Durogesic® and BuTrans®.
- Physiotherapist prescribers may prescribe transdermal medicines patches as part of the scope of physiotherapy prescribing practice.
- All physiotherapists may treat patients who wear opioid patches, for example, as part of musculoskeletal, neurological, aquatic physiotherapy or pain services.
- Immersion in a hydrotherapy pool and exercise may both singularly raise the body temperature. The combination of exercising in a hydrotherapy pool may raise body temperature enough to present a risk of increased absorption of opioid analgesia.
- There is lack of published evidence on the pharmacokinetics of opioid analgesia specifically within hydrotherapy temperature ranges used in aquatic physiotherapy but the risks of accidental overdose associated with heat are clearly documented.

Risk of side effects.

- Rises in external ambient temperature or internal body temperature can cause increased release of opioid into the body.
- Opioid concentrations in the body can increase by one-third if skin temperature reaches 40°C.
- Opioid patches and the skin around them must not be exposed to heat pads, electric blankets, hot water bottles, heat lamps, saunas, hot tubs, sun beds. Patients wearing opioid patches must not take long hot baths or sunbathe.
- Patients with fever, or who get very hot through extreme exercise or exposure to external heat sources, including hydrotherapy pools, may be at risk of accidental overdose of opioid analgesia.

Clinical Challenge

- Adverse effects from transdermal patches is a manageable risk within physiotherapy practice.
Neither exercise nor aquatic physiotherapy is absolutely contraindicated in patients that have multiple comorbidities and/or poor exercise tolerance levels, including those who wear a transdermal patch. You must make a professional judgment based on an individual risk assessment if aquatic physiotherapy is appropriate for any particular patient currently wearing a transdermal drug patch.

Hydrotherapy pools must be maintained in a thermoneutral temperature range of 32-35.5°C. Patients should not be exercising in hydrotherapy pools that are outside this range.

Key messages for members

- If you prescribe opioid patches you must provide patients with directions for safe use, including the risks of raised temperature on release of the medicine.
- If you treat patients who wear opioid patches you must be aware of the signs of opioid overdose including shallow breathing, tiredness, inability to think, walk or talk normally, and feeling faint, dizzy or confused.
- You must check your patient’s drug history for transdermal patch use before they participate in aquatic physiotherapy or intense exercise programmes.
- Patients may time the changing of their opioid patches to remove one patch before aquatic physiotherapy and replace it afterwards. This will remove the risk of accidental overdose.
- You must carefully monitor all patients wearing transdermal patches when they are having aquatic hydrotherapy. If they experience any symptoms of opioid overdose they must report these to the practitioner.
- If a patient experiences opioid side-effects you must ensure the patient is immediately medically reviewed and monitored. You must document the adverse event and inform the patient’s GP.
- You must report any adverse reactions in patients wearing transdermal patches to the medicines regulator using the Yellow Card reporting scheme and any other local reporting system that is required.
- You must keep clear records that document patient safety, including
  - Informed consent for treatment including suitability for aquatic hydrotherapy with transdermal patch use.
  - Supervision provided whilst on treatment.
  - How patients can summon assistance if they experience side effects.
  - Pool temperature measured whilst a patient using a transdermal patch is in the water.

Selected other resources.

- Yellow Card Reporting Scheme [https://yellowcard.mhra.gov.uk/](https://yellowcard.mhra.gov.uk/). The Medicines and Healthcare Products Regulatory Agency (MHRA) uses information collected to modify the known safety information about medicines.
- Your local pharmacy adviser ought to be able to provide you with detailed advice on medicines use.
- Your local medicines governance committee may provide further local policy and guidance for the safe use of transdermal medicines patches in clinical settings.
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