**British Association of Dermatologists - Clinical Guidance**

**Actions to minimise risk of harm from potassium permanganate**

**Background**

Potassium permanganate, when diluted, is a mild antiseptic and astringent used to treat weeping and blistering skin conditions such as weeping/infected eczema and leg ulcers. Potassium permanganate is supplied in a concentrated form for external use only, usually as a tablet (Permitabs®, EN-Potab®) or as a 5% solution, that must be diluted before use as a wet dressing or bath.

The formulations of potassium permanganate (concentrate) look like an oral tablet or juice drink but can be fatal if ingested orally, due to local inflammatory reactions that block the airways or cause perforations of the gastrointestinal tract, and can also cause death through toxicity and organ failure.

Despite a Patient Safety Alert1 being issued in 2014, patient safety incidents, including fatalities, are still being reported where the concentrated form of potassium permanganate is either inadvertently administered to patients orally , or patients inadvertently swallow the concentrated form when it is left near to the patient, prior to dilution.

The guidance below seeks to implement further actions to mitigate these patient safety incidents.

**SECONDARY CARE**

Organisation should undertake a risk assessment to determine whether the use of potassium permanganate outweighs the risk of harm to patients.

**Pharmacy/Dispensing**

* Potassium permanganate (concentrate): should be stored within an automated dispensing system or with medicines intended for external use only; it must not be stored with medicines intended for internal use.
* Storage and use should comply with Control of Substances Hazardous to Health (COSHH) regulations.
* Potassium permanganate (concentrate) should always be dispensed it its original container.
* Potassium permanganate (concentrate) should always be dispensed for named patient use.
* The Pharmacy system template for potassium permanganate (concentrate) should be updated to ensure it states:
  + For External Use Only
  + Potassium Permanganate 400mg tablets for cutaneous solution or

Potassium Permanganate 5% solution

* + Dilute 400mg ‘tablet’ / 5% solution\* in water as directed to obtain at least a 0.01% (1 in 10,000) solution and use the diluted solution as a soak
  + POTENTIALLY FATAL IF SWALLOWED
  + Duration of treatment/stop date

\*delete as appropriate

**Storage in Clinical Area**

* Potassium permanganate (concentrate) should be stored with other medicines intended for external use; it must not be kept in the medicines trolley, in the patient’s locker, or stored with medicines for internal use.
* Storage and use should comply with Control of Substances Hazardous to Health (COSHH) regulations.
* Cupboards and closed storage units in which medicines are stored and/or the rooms that accommodate these must be lockable and locked when not being accessed

**Prescribing**

* Potassium permanganate should be prescribed for a named patient; by a specialist in dermatology, a junior doctor or other clinician working under the guidance of a dermatologist, or specialist tissue viability staff only.
* Potassium permanganate must be prescribed (either handwritten or via an electronic prescribing system) as ‘0.01% potassium permanganate SOAK’, the route should be clearly defined as topical and, on electronic prescribing systems, a warning should be added stating ‘For topical use only, must be diluted before use – POTENTIALLY FATAL IF SWALLOWED’.
* A duration of treatment should be added to the prescription.

**Administration**

* Potassium permanganate (concentrate) should never be left near a patient.
* The diluted solution (as determined by local policy but no greater than 0.01% solution) must be prepared away from the patient (eg in the ward treatment room) and the dilute solution taken to the patient for application and used immediately.
* Diluted solution should be disposed of immediately after each treatment.

**Waste**

* The dilute 0.01% (1 in 10,000) solution can be disposed of via the hospital waste water (eg down a sink or toilet/sluice); as per organisational policy.
* Potassium permanganate (concentrate) must be disposed of as chemical waste; as per organisational policy.

**Discharge**

* The need for potassium permanganate treatment must be reviewed on discharge by a member of the prescribing specialist team.
  + If the treatment is no longer required, the remaining potassium permanganate (concentrate) should be returned to pharmacy for destruction or disposed of at ward level as pharmaceutical waste.
  + If treatment is to be continued:

1. **Risk assess** to ensure:
2. Patient able to self-administer, or carer can undertake, potassium permanganate soaks,
3. Patient/carer can safely store potassium permanganate (concentrate) in the patient’s home
4. There is a mechanism in place for safe disposal of any excess potassium permanganate (concentrate).

Need to ensure that potassium permanganate (concentrate) can, and will be, safely stored in the patient’s home, out of reach of children or vulnerable adults, and that the patient has the cognitive ability/visual acuity to self-manage and prepare dilution; with no risk of inadvertent swallowing of concentrate by patient, family member or regular visitor to patient’s home.

**If patient can self-administer/carer can administer and safe to store**:

The potassium permanganate (concentrate), dispensed for the named patient, should be supplied on discharge to allow continuity of care.

**If patient cannot self-administer/no carer, but safe to store**:

The potassium permanganate (concentrate), dispensed for the named patient, should be supplied on discharge to allow continuity of care.

Ward staff will need to liaise with community nursing to ensure continuity of treatment – see Primary Care guidance.

**If deemed unsafe to store**:

Patient mustnot be supplied with potassium permanganate (concentrate) on discharge until specialist team have reviewed need for ongoing treatment and assessed benefit of treatment versus identified risk. If benefit outweighs risk; then need to consider all actions to mitigate identified risk.

Ward staff will need to liaise with community nursing to communicate identified risk and agree mitigating actions to ensure safe continuity of treatment – see Primary Care guidance.

* The outcome of the risk assessment should be clearly documented in the patient’s medical record and in the discharge summary.

**Discharge summary** should include:

* outcome of risk assessment (as outlined above), and any identified mitigating actions
* clearly define length of treatment (and whether potassium permanganate (concentrate) has been dispensed from secondary care)
* whether GP needs to prescribe additional supply (ideally secondary care should supply full course of treatment to avoid need for additional supply)
* expectations of primary care colleagues (i.e. patient unable to self-administer, need for follow up risk assessment, need to supply etc.)
* a specific Patient Information Leaflet should be supplied to the patient.

**Outpatients and clinic letters**: if potassium permanganate is being initiated in an outpatient clinic, then the clinic letter should include:

* outcome of risk assessment (as outlined above), and any identified mitigating actions
* clearly define length of treatment (and whether potassium permanganate (concentrate) has been prescribed and dispensed by community pharmacy)
* whether GP needs to prescribe additional supply (ideally secondary care should supply full course of treatment to avoid need for additional supply)
* expectations of primary care colleagues (i.e. patient unable to self-administer, need for follow up risk assessment, need to supply etc.)
* a specific Patient Information Leaflet should be supplied to the patient from clinic.

**Actions to minimise risk of harm from potassium permanganate**

**PRIMARY CARE**

**Treatment initiated in hospital**

If a patient has been discharged from hospital on potassium permanganate treatment, a risk assessment should have been done by hospital staff to ascertain who will administer the potassium permanganate soaks i.e. self-administration, carer administration or community nurse administration, and that potassium permanganate (concentrate) can be safely stored.

If community staff have been asked to administer the treatment, they should confirm that potassium permanganate (concentrate) can be safely stored on their first visit.

Ideally, secondary care should supply sufficient potassium permanganate (concentrate) to complete the anticipated course of treatment.

**Continuing supply or initiation of treatment**

For most patients, a continuing supply of potassium permanganate (concentrate) should not be necessary. If, however, a prescription is required from primary care for ongoing treatment, or potassium permanganate soaks are being initiated in primary care, see information below.

**Prescribing**

* Potassium permanganate should be prescribed by a GP as an acute prescription; it should not be added to the repeat prescription section of the patient’s record.
* Potassium permanganate must be prescribed (either handwritten or via an electronic prescribing system) as ‘0.01% potassium permanganate SOAK’, the route should be clearly defined as topical and, on electronic prescribing systems, a warning should be added stating ‘For topical use only, must be diluted before use – POTENTIALLY FATAL IF SWALLOWED’.
* A duration of treatment should be added to the prescription.

**Risk Assess** on initiation of treatment, or when a repeat prescription is required, to ensure:

* Patient able to self-administer, or carer can undertake, potassium permanganate soaks,
* Patient/carer can safely store potassium permanganate (concentrate) in the patient’s home
* There is a mechanism in place for safe disposal of any excess potassium permanganate (concentrate).

Need to ensure that potassium permanganate (concentrate) can, and will be, safely stored in the patient’s home, out of reach of children or vulnerable adults, and that the patient has the cognitive ability/visual acuity to self-manage and prepare dilution; with no risk of inadvertent swallowing of concentrate by patient, family member or regular visitor to patient’s home.

**If patient can self-administer/carer can administer and safe to store**:

The potassium permanganate (concentrate) should be prescribed for the patient/carer to collect and have dispensed by community pharmacy/dispensing doctor.

**If patient cannot self-administer/no carer, but safe to store**:

The potassium permanganate (concentrate) should be prescribed for the patient/carer to collect and have dispensed by community pharmacy/dispensing doctor.

The GP practice will need to liaise with community nursing to ensure treatment can be administered.

**If deemed unsafe to store**:

Patient mustnot be supplied with a prescription for potassium permanganate (concentrate) and a review undertaken to assess the need for ongoing treatment. If benefit outweighs risk; then need to consider all actions to mitigate identified risk.

The GP practice will need to liaise with community nursing to communicate identified risk and agree mitigating actions to ensure treatment can be administered safely.

**Dispensing (Community Pharmacy/Dispensing Doctor)**

* Potassium permanganate (concentrate) should be stored within an automated dispensing system or with other external medicines; it must not be stored with medicines intended for internal use.
* Storage and use should comply with Control of Substances Hazardous to Health (COSHH) regulations.
* Potassium permanganate (concentrate) should always be dispensed it its original container.
* The Pharmacy system template for potassium permanganate (concentrate) should be updated to ensure it states:
  + For External Use Only
  + Potassium Permanganate 400mg tablets for cutaneous solution or

Potassium Permanganate 5% solution

* + Dilute in water as directed to obtain at least a 0.01% (1 in 10,000) solution and use the diluted solution as a soak
  + POTENTIALLY FATAL IF SWALLOWED
  + Duration of treatment/stop date
* Where possible, a BAD Patient Information Leaflet should be supplied with the prescription.

**NOTE**: Community Pharmacists should ensure that patients purchasing potassium permanganate over the counter are aware that it is for external use only and potentially fatal if swallowed. Consideration should be given to how it will be stored in the patient’s home.

**Administration**

* If it has been identified that storage of potassium permanganate (concentrate) is potentially unsafe; ensure community staff are aware of mitigating actions agreed. Ensure potassium permanganate (concentrate) is never left near the patient and that after the diluted solution is prepared, the potassium permanganate (concentrate) is immediately returned to the safe storage location.

**Waste**

* The dilute 0.01% (1 in 10,000) solution can be disposed of via the household drain
* Dilute potassium permanganate must not be disposed of via surface water drainage; where it may mix with groundwater and cause environmental damage.
* Excess potassium permanganate (concentrate) tablets/solution should be returned to the community pharmacy/dispensing doctor for safe disposal.

If it has been identified that storage of potassium permanganate (concentrate) is potentially unsafe, but mitigating actions have been implemented, community staff must ensure that no excess potassium permanganate (concentrate) is left in the patient’s home at the end of the course of treatment. Potassium permanganate (concentrate) should be disposed of via community pharmacy as clinical waste.

**References**

1. NHS England. Patient Safety Alert - [Risk of death or serious harm from accidental ingestion of potassium permanganate preparations](https://www.england.nhs.uk/wp-content/uploads/2014/12/psa-potass-prmangant.pdf). 22 December 2014.
2. British Association of Dermatology. [How to use potassium permanganate soaks](https://www.bad.org.uk/patient-information-leaflets/potassium-permanganate-solution-soaks/?showmore=1&returnlink=https%3A%2F%2Fwww.bad.org.uk%2Fpatient-information-leaflets#.YFSlINpxeUk). October 2015.