NHS Improvement

Patient Safety Alert

Resources to support safe and timely management of hyperkalaemia (high level of potassium in the blood)

8 August 2018

Alert reference number: NHS/PSA/RE/2018/006

Resource Alert

Potassium is essential for the body's normal function, including maintenance of normal heart rhythm. The way the body responds to hyperkalaemia – a higher than normal level of potassium in the blood – is unpredictable; arrhythmias and cardiac arrest can occur without warning. Hyperkalaemia can affect patients in hospital and being cared for at home.

Hyperkalaemia is a potentially life-threatening emergency which can be corrected with treatment.[1]

Over a recent three-year period, the National Reporting and Learning System (NRLS) received 35 reports of patients suffering cardiac arrest while hyperkalaemic. These suggest that some healthcare professionals may not appreciate that clinical assessment, treatment and ongoing monitoring of hyperkalaemia is time critical.

Typical extracts from incident reports read:

"the patient had a raised potassium which required treatment and [a member of staff] apparently stated that the day team could deal with it."

"[Treatment for hyperkalaemia] was prescribed and administered at approx 16:30; however, no further review of the patient was undertaken and no repeat treatment or bloods were done until the patient arrested at 09:26."

Review of local guidance to manage hyperkalaemia found some examples that were not evidence-based, and/or were not written in a way that was easy to follow during an emergency.

This alert signposts to resources on the NHS Improvement website that can help organisations ensure their clinical staff have easily accessible information to guide prompt investigation, treatment and monitoring options. The resources include an example of how hospitals could make this easier for their staff by pre-preparing sets of the equipment, guidance and medication they would need in an emergency.

The resource webpage also includes short videos organisations can use to help frontline staff recognise that hyperkalaemia is a medical emergency and encourage them to familiarise themselves with local guidance and equipment.

Sharing resources and examples of work

If there are any resources or examples of work developed in relation to this alert you think would be useful to others, please share them with us by emailing patientsafety.enquiries@nhs.net

Actions

Who: All organisations providing NHS funded-care for adults or children where blood test results may be received and reviewed, including GP services*

When: To begin as soon as possible and be completed by 8 May 2019

1. Identify a senior clinician in the organisation to lead the response to this alert
2. Review or produce local guidance (including key steps or easy reference guides) for the management of hyperkalaemia that aligns with the evidence-based sources highlighted in the linked resources
3. Ensure that local guidance can be easily accessed by all staff including bank and agency staff
4. Ensure relevant guidance and resources are embedded in clinical practice by revising local training and audit
5. Use local communication strategies (such as the videos, newsletters, local awareness campaigns, etc) to make all staff aware that hyperkalaemia is a potentially life-threatening emergency and that its timely identification, treatment and monitoring during and beyond initial treatment is essential

*While general practices will not need hyperkalaemia treatment protocols or equipment, they will need to ensure they implement all actions that will support the right response to any blood test results they receive indicating hyperkalaemia.

See page 2 for resources, references and advice on who this alert should be directed to.

Alert reference number:	NHS/PSA/RE/2018/006
	Resource Alert

Patient safety incident data

The NRLS was searched for incidents categorised by the reporter as severe harm or death, and that occurred between 1 November 2014 and 31 October 2017 and were exported to the NRLS dataset on or before 1 February 2018.

A complex combination of keywords was utilised to include misspellings related to: 'potas'; 'K+'; 'Hyperkal '; 'Hypokal'; 'low/high (blood) potassium level/s'; 'high K+'.

All incidents were clinically reviewed; 58 which stated or suggested concern around the management of hyperkalaemia were considered relevant. In 35 of those reports (33 adults, one child and one baby) the patient was reported to have had a cardiac arrest whilst hyperkalaemic.

It is important to note that although patients detailed in the reports experienced a cardiac arrest, it is not possible from the available information to conclude that this was as a direct result of elevated serum potassium.

Resources

- The resources to support the implementation of this alert are available on the NHS Improvement website https://improvement.nhs.uk/resources/resources-to-support-safe-and-timely-management-of-hyperkalaemia

References

1. UK Renal Association. Clinical practice guidelines: Treatment of acute hyperkalaemia in adults (2014). https://renal.org/wp-content/uploads/2017/06/hyperkalaemia-guideline-1.pdf

Stakeholder engagement

- National Patient Safety Response Advisory Panel (for a list of members and organisations represented on the panel, see improvement.nhs.uk/resources/patient-safety-alerts/)

Advice for Central Alerting System officers and risk managers

This alert asks for a systematic approach to ensuring consistent and standardised guidance is produced and disseminated across the whole organisation. It needs co-ordinated implementation, not dissemination of the alert to teams or departments for their individual action. For acute hospitals, the issue can affect patients in all clinical areas and has no specialist nursing or consultant roles directly linked to it. Therefore you may need to seek advice from senior nurses or doctors about who will co-ordinate the actions required by this alert for your organisation.

We recommend that mental health and learning disability trusts seek advice from a senior nurse or doctor to identify the most appropriate person to co-ordinate the production or review of local guidance.

We recommend that GP practices and other primary care services consider who would be the most appropriate person to co-ordinate the production or review of local guidance before wider dissemination of the alert.