Thursday 11 December 2025

Seasonal Pseudohyperkalaemia (high potassium results) — what you need to know for winter (and how we're helping)

Dear colleague

As the temperature drops, we see a familiar seasonal pattern – potassium results that look falsely high. "Seasonal pseudohyperkalaemia" leads to repeat testing, anxious patients and wasted appointments.

Some of the reasons for this are listed below:

- Cold hands/arms can reduce circulation which can means harder vein access.
- Longer tourniquet times, vein probing, muscle clenching/fist pumping.
- Sample cooling during transport or delay in centrifugation.
- Incorrect order of draw for example EDTA (lavender top) incorrectly before serum (gold top)

These factors can cause potassium to leak from cells into the serum/plasma or to contaminate the plasma before analysis, leading to artificially high results.

What NWLP is doing:

We're working hard to reduce this effect, so you get the most reliable results. We have:

1. Reviewed and optimised courier routes to ensure timely receipt of samples to the laboratory.
2. Ensured our couriers use padded and insulated transport boxes to protect samples from cold exposure in transit.
3. Where appropriate, we can deploy community centrifuges so samples can be stabilised locally. However, early data suggests this has not eliminated the problem

What you and your team (and your patients) can do:

We ask for your support - some simple steps at your surgery will make a big difference.

1. Patient / phlebotomy technique tips:

- Encourage the patient to be warm before the blood draw — a warm arm helps circulation providing better vein access.
- Avoid fist clenching or pumping during or before venepuncture: ask the patient to relax the hand; avoid repeated squeezing. (Fist clenching is a known risk for false K^+ elevations).
- Avoid prolonged tourniquet application - once the vein is accessed, release the tourniquet as soon as feasible. If it is difficult to locate a vein, removing the tourniquet for a short time before venepuncture is useful.
- Keep collected samples at room temperature and avoid exposure to cold surfaces and draughts.
- Send samples to the laboratory as soon as possible on the next scheduled courier.

2. Local surgery / environment tips:

- Ideally the rooms where patients wait and where samples are collected should be warm, so the patient's arm and samples are not compromised by the cold.
- If you have space, we can talk with you further about assessing whether a community centrifuge will help to stabilise samples.

Why this matters and benefits

- Fewer false elevated K^+ results will ensure fewer unnecessary call-backs to patients, fewer wasted appointments, less staff time.
- Better patient experience: less anxiety for patients when we reduce needless "please come back" notifications.
- Improved result quality means you can trust the lab value is more likely to reflect the true physiological state, reducing risk of misinterpretation or unnecessary treatment.
- Demonstrates good practice for sample collection in the cold season - part of good governance and quality assurance for your surgery.

Quick reference summary

We have provided a quick reference summary which can be located where phlebotomy takes place:

"6 Point Check" for this winter:

1. **Warm patient** - ensure patient's arm is warm and well-circulated.
2. **Relaxed hand** - avoid fist pumping; ask patient to keep the hand relaxed.
3. **Efficient tourniquet use** - minimise tourniquet-to-venepuncture time; if it has been difficult to locate a vein a short 'tourniquet break' before venepuncture is advised.
4. **Minimise delays** - send the sample promptly, ensure handling is swift and appropriate packaging used.
5. **Environmental awareness** - consider the effect of ambient cold, particularly when sample collection is from cold surroundings or the samples are exposed to cold surfaces.
6. **Correct order of draw** - ensure you collect specimens in the correct order of draw.

If you have any further questions on queries, please contact us at ichc-tr.biochemistryadvice@nhs.net

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