

HD-Methotrexate fluid shortage - Adult Oncology and Haematology

28th Jan 2026 | Donna Constantine, Advanced Cancer Pharmacist, Oxford



Unfortunately, we have been informed of prolonged stock shortages affecting the hydration fluids routinely used in high-dose methotrexate adult regimens.

Shortage alerts:

1. [Shortage of Steriflex No. 109 \(1L\) and No. 171 \(2L\): Potassium Chloride 0.15%, Sodium Chloride 0.45%, Glucose 2.5% Bags – NHS SPS - Specialist Pharmacy Service – The first stop for professional medicines advice](#)
2. [Steriflex No. 177, No. 178, No. 132, No. 134, No. 139, No. 19, No. 26, No. 113 and No. 151 Bags \(licensed and unlicensed IV Fluids\) – NHS SPS - Specialist Pharmacy Service](#)

Regimen fluids affected:

1000 mL GLUCOSE 2.5%, SODIUM CHLORIDE 0.45% with POTASSIUM CHLORIDE 20 mmol - is out of stock until September 2026.

2000 mL GLUCOSE 2.5%, SODIUM CHLORIDE 0.45% with POTASSIUM CHLORIDE 20 mmol - will be out of stock from May until August 2026.

3000 mL GLUCOSE 2.5%, SODIUM CHLORIDE 0.45% with POTASSIUM CHLORIDE 60 mmol - discontinued.

This is due to a change in Fresenius production and review of their catalogue. This change is due to affect several Fresenius product lines over the coming months.

There is no equivalent product available on the market, therefore we have had to consider the next best option available for both oncology and haematology patients.

Considered alternatives:

Only products containing potassium chloride 0.15% were considered, adding potassium chloride to a fluid bag at ward level is considered a high-risk activity and should be avoided wherever possible.

Any products marked for stock shortage later in the year were discounted.

Sodium bicarbonate will always be added at ward level to each infusion bag

Special products were not considered.

1000 mL SODIUM CHLORIDE 0.9% with POTASSIUM CHLORIDE 20 mmol

alternated in sequence with

1000 mL GLUCOSE 5% with POTASSIUM CHLORIDE 20 mmol

- **Advantages:** On average provides the same amounts of glucose / sodium chloride currently contained within the regimen. Available in 1 litre - no increased nursing workload. Better manages hyponatraemia risk. Alternating sodium chloride with glucose administration better manages fluid overload risks. Some other centres use this method already.
- **Disadvantages:** More risk of glucose spikes during infusion of 5% glucose bag. Risk of administration errors - i.e. bags being hung in incorrect sequence, both bags are

isotonic and the risk of harm should this occur should be low. More complex prescription substitution.

1000 mL SODIUM CHLORIDE 0.18%, GLUCOSE 4% with POTASSIUM CHLORIDE 20 mmol

- **Advantages:** Single infusion bag - simple administration and prescription substitution. Available in 1 litre - no increased nursing workload.
- **Disadvantages:** Hypotonic solution - risk of hyponatraemia which is more likely with large volume fluid administration. **Lower sodium concentrations** in hydration fluids are potentially associated with **slower methotrexate clearance** and a higher risk of nephrotoxicity (1, 2). More risk of glucose spikes during treatment (higher glucose content).
 - o Addition of 50mmol NaHCO₃ to a 0.18% sodium chloride solution will change the composition of this fluid bag however it is still physiologically hypotonic.

1000 mL SODIUM CHLORIDE 0.9% with POTASSIUM CHLORIDE 20 mmol

- **Advantages:** Single infusion bag - simple administration and prescription substitution. Available in 1 litre - no increased nursing workload. No risk of blood sugar spiking.
- **Disadvantages:** More risk of hypernatraemia and fluid overload (risk of prolonging methotrexate clearance) when using in large volumes. No calorific content for energy maintenance. Lack of evidence for other hospitals using saline only-based fluid protocols.

Final recommendation:

1000 mL SODIUM CHLORIDE 0.9% with POTASSIUM CHLORIDE 20 mmol alternated in sequence with **1000 mL GLUCOSE 5% with POTASSIUM CHLORIDE 20 mmol**

- Sodium bicarbonate is to be added to each 1L infusion bag as per SACT protocol

Oxford - EPR powerplan updates have been requested and should be actioned shortly.

Network - As this is a temporary shortage, we hope to return to the established fluid regimen as soon as products are made available again. Therefore, SACT protocols will not be amended to reduce unnecessary workload, but this notice will be uploaded to both NSSG and TVCA websites as well as being communicated to Lead Pharmacists across Thames Valley.

- For institutions using local prescriptions/plans please update these in line with the suggested recommendation.
- As there is a mix of practice (some using Aria fluid prescriptions, others using local fluid prescriptions/proformas on paper or e-prescribing systems) we will explore whether a **supportive fluid prescription** for methotrexate based-regimens can be made available for the interim period. **This will need added to Aria prescriptions and be communicated out separately when available.**

References

1. Bernhardt MB, Brown AL, Grim AT, Scheurer ME, El-Mallawany NK, Ozuah NW. Safety analysis of high-dose methotrexate in pediatric non-Hodgkin lymphomas. *Pediatr Blood Cancer*. 2022;69(11):e29940. doi:10.1002/psc.29940

2. Kinoshita A, Kurosawa Y, Kondoh K, et al. Effects of sodium in hydration solution on plasma methotrexate concentrations following high-dose methotrexate in children with acute lymphoblastic leukemia. *Cancer Chemother Pharmacol.* 2003;51(3):256-260. doi:10.1007/s00280-002-0565-9