



9 October 2020

Medicine Supply Alert Notice

Lorazepam (Ativan®) 4mg/ml Solution for injection (Pfizer)

Priority: Level 2*

Valid until: Early December 2020

Issue

1. Supplies of lorazepam (Ativan®) 4mg/ml solution for injection will be extremely limited between w/c 5th October until early December 2020 and reserved for primary care only (see ordering information below).
2. A US product, lorazepam injection 2mg/ml, supplied in Carpuject™ single dose cartridges and considered unlicensed in the UK, is available from Pfizer during this out of stock period.
3. Carpuject™ lorazepam 2mg/ml single dose cartridges can be considered bioequivalent to the UK brand lorazepam (Ativan®) 4mg/ml solution for injection, however there is a difference in concentration of lorazepam between the two presentations so care must be taken when calculating doses.
4. Carpuject™ lorazepam 2mg/ml single dose cartridges must be used in combination with the Carpuject™ holder provided. Injection in cartridge is diluted with an equal volume of compatible solution for IV administration (IM injection is administered undiluted).

Advice and Actions

5. Board pharmacy procurement teams and clinical leads should work together to ensure the following actions are undertaken where relevant:
 - prioritise remaining supplies of lorazepam (Ativan®) 4mg/ml solution for injection for indications where alternatives are not appropriate;
 - consider prescribing the non-UK licensed US product, lorazepam injection 2mg/ml supplied in Carpuject™ single dose cartridges (see additional information);
 - ensure all affected clinical areas are aware of this shortage and ensure staff administering the Carpuject™ lorazepam 2mg/ml single dose cartridges receive appropriate training;
 - ensure clinical colleagues are aware that, although Carpuject™ lorazepam 2mg/ml single dose cartridges can be considered bioequivalent to the UK brand Ativan® and no dosing adjustments should be required, **there are significant differences in method of administration and also in solution strength;**
 - use the resources provided (links in supporting information section below and/or attached) to ensure staff administering Carpuject™ lorazepam 2mg/ml single dose cartridges are familiar with the method of dilution and administration; and
 - if Carpuject™ lorazepam 2mg/ml single dose cartridges are not considered suitable or Boards are unable to obtain a sufficient quantity to meet their local requirements they should consider:

- placing orders for non-UK licensed lorazepam; and/or
- using alternative medications as outlined in the “Alternative agents and management options” section below.

Additional Information

Lorazepam injection 2mg/ml in Carpuject™ single dose cartridges

6. To help mitigate the shortage, Pfizer have sourced lorazepam injection 2mg/ml in Carpuject™ single dose cartridges from the US, which are considered unlicensed in the UK.



Figure 1. Lorazepam injection 2mg/ml in Carpuject single

Figure 2. Carpuject holder dose cartridge

7. This product can be considered bioequivalent to lorazepam (Ativan®) 4mg/ml injection and therefore no dosing adjustments should be required (**note difference in solution strength**).
8. However, due to differences in presentation between the UK and US products, pharmacy departments should work closely with relevant colleagues when introducing this medication.
9. Links to useful resources can be located below.

Product monographs

10. UK [Summary of Product Characteristics and Patient Information Leaflet for Ativan® 4mg/ml Solution for Injection](#).
11. US [Summary of Product Characteristics and Patient Information Leaflet for lorazepam injection 2mg/ml](#).

Training video

12. [Instructions](#) on the use of the Carpuject™ cartridges and holder.
13. Orders for lorazepam injection 2mg/ml single dose cartridges will be provided with compatible Carpuject™ holders. Whilst the holders are designed to be reusable, Pfizer will be supplying enough holders with each order to enable them to be used once only then discarded.
14. Lorazepam injection 2mg/ml single dose cartridges **must** be used in combination with the Carpuject™ holder for dilution/administration of the solution. The solution must **not** be withdrawn directly from the cartridge.

Key differences between lorazepam (Ativan®) 4mg/ml Solution for Injection and lorazepam injection 2mg/ml Carpuject™ single use cartridges

Product Name	Lorazepam injection, solution 2mg/ml	Lorazepam (Ativan®) 4mg/ml Solution for Injection)
Distributed by	Hospira Inc USA	Pfizer Ltd UK
Licensed Indication	Status Epilepticus Preanesthetic medication	Status epilepticus. Pre-operative medication or premedication Treatment of acute anxiety states, acute excitement or acute mania.
Solution strength/dose	Each cartridge contains 2mg (1ml of 2mg/ml solution)	Each ampoule contains 4mg (1ml of 4mg/ml solution)
Primary Container	Carpuject™, Single-dose cartridge with Luer Lock for the Carpuject™ Syringe System	Ampoule (type I glass) with a one-point-cut opening
Pack size	10 cartridges of 1ml solution for injection	10 ampoules of 1ml solution for injection
Administration	Carpuject™ cartridges must be used in combination with the Carpuject™ holder provided. Injection in cartridge is diluted with an equal volume of compatible solution for IV administration (IM injection is administered undiluted)	Contents of ampoule diluted with saline or sterile water for injection BP as a 1:1 dilution for IV administration. (may also be diluted for IM administration)

Ordering Information

15. Lorazepam injection 2mg/ml single dose cartridges can be ordered through Pfizer's Customer Contact Centre directly on 0845 608 8866, PIP code **8140907** (EAN Code is **(01)10304091985305**). The expiry date of the product is January 1st, 2021.
16. Pfizer have confirmed they will retain sufficient stock of lorazepam (Ativan®) 4mg/ml solution for injection to ensure ongoing supplies remain available for community pharmacies throughout this period. Supplies for community pharmacy accounts should continue to be ordered via Alliance Healthcare using PIP code **8019127**. EAN Code is **5391521021205**. For any queries on stock ordering please contact the Pfizer Customer Contact Centre on 0845 608 8866.

Alternative agents and management options

Alternative unlicensed imports

17. The following importer companies currently have stock of non-UK licensed lorazepam, 4mg/ml and/or 2mg/ml, injection or have indicated they can source supplies:

- Clinigen;
- Durbin PLC;
- Mawdsleys Unlicensed; and
- Waymade PLC

18. However, quantities available and lead times vary so please contact the companies directly for up to date information. Please note there may be other companies that can also source supplies and that this information is correct at time of issue but is subject to change.
19. Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Board or local governance procedures. Please see the links below for further information:
- [Prescribing unlicensed medicines](#), General Medical Council (GMC);
 - [The supply of unlicensed medicinal products](#), Medicines and Healthcare products Regulatory Agency (MHRA); and
 - [Professional guidance for the procurement and supply of specials](#), Royal Pharmaceutical Society (RPS).

Alternative treatment options

20. The UKMi [memo](#) provides further information on potential alternative agents that might be considered if the unlicensed lorazepam injection options are not deemed appropriate or are insufficient to meet local requirements.
21. In all cases, expert advice should be sought on choice of an alternative agent and healthcare professionals are encouraged to agree treatment approaches with their pharmacy teams once supply of alternatives has been confirmed. During this period there are also limited supplies of some of the alternative agents to lorazepam including diazepam 10mg/2ml emulsion for injection (Diazemuls®), which is currently long term out of stock until at least February 2021.
22. Please note - with regards to use of midazolam injection, Boards should ensure compliance with the [NPSA alert](#) on reducing the risk of overdose with this preparation.

Enquiries

23. Enquiries from Health Boards or healthcare professionals should be directed in the first instance to PharmacyTeam@gov.scot (primary care) or NSS.NHSSMedicineShortages@nhs.scot (secondary care).