MedicinesUK®

07 October 2026

Dear Healthcare Professional,

Caspofungin: use of polyacrylonitrile membranes during continuous renal replacement therapy.

Medicines UK, on behalf of the following Marketing Authorisation Holders (MAHs) for caspofungin-containing medicines, is distributing this Direct Healthcare Professional (DHPC) letter, to communicate the important safety information related to the use of polyacrylonitrile (PAN) membranes during continuous renal replacement therapy (CRRT).

Summary

• There has been some evidence to suggest that polyacrylonitrile (PAN)-based membranes used in CRRT may adsorb caspofungin, potentially reducing systemic exposure and treatment effectiveness. This may result in therapeutic failure with potentially life-threatening consequences in critically ill patients.
•It is considered that the potential risk is greatest when a new membrane or filter circuit has commenced, and adsorption reduces over time as the membrane becomes saturated
• Where clinically appropriate, the MHRA recommend administering echinocandins such as caspofungin, and other similar drugs at least 6 hours after CRRT initiation or filter change to minimise potential adsorption.
• Monitor patients closely for treatment response and seek advice from local infectious disease specialists.
• If required, contact University College London Hospitals: Outpatient services | Hospital for Tropical Diseases for specialist infectious diseases advice on acute fungal infections.

Background on the safety concern

Continuous renal replacement therapy (CRRT) is commonly used in critically ill, haemodynamically unstable patients, particularly in intensive care settings, for the management of acute kidney injury and fluid overload. Published evidence has shown that caspofungin can bind to polyacrylonitrile (PAN)-based membranes used in CRRT which may result in therapeutic failure with potentially life-threatening consequences in critically ill patients. It is considered that the potential risk is greatest when a new membrane or filter circuit has commenced, and adsorption reduces over time as the membrane becomes saturated.

Caspofungin is an antifungal for intravenous infusion. Caspofungin is one of four medicines in the echinocandin class of antifungals, along with micafungin, rezafungin and anidulafungin. While there are differences between the four echinocandins in terms of their metabolism and half-life, there is limited data on the adsorption of other drugs in this class, and therefore there is a potential risk that all echinocandins will be adsorbed to PAN-based membranes used in CRRT.

Following the recent PRAC safety assessment of caspofungin adsorption on PAN-based membranes, the MHRA undertook a similar safety review. A literature review identified several case studies reporting fatal events following caspofungin use in patients also receiving CRRT. This was thought to be due to the adsorption of caspofungin to the PAN-based membrane. However, subsequent real-world retrospective studies in intensive care patients have not demonstrated reduced caspofungin plasma concentrations during CRRT. Both in vitro and clinical studies have important limitations, and overall the evidence remains conflicting. As such, significant concerns have been raised about the potential clinical impact of avoiding echinocandins based on this inconclusive evidence base. Further, adsorption risks have not been excluded with other membrane filter types, and with other drugs with similar properties when used concurrently in patients receiving CRRT.

Studies into the adsorption potential of filter membranes indicate that adsorption potential is likely highest immediately after a new membrane is used, and adsorption potential reduces over time as the membrane becomes increasingly saturated. Therefore, by scheduling drug administration to occur significantly later than a change of membrane, any possible loss of drug could potentially be mitigated to some degree and would provide a more practical alternative than avoiding combined caspofungin/CRRT use altogether.

Where clinically appropriate, the MHRA are recommending that healthcare professionals administer echinocandins after at least six hours of PAN-based membrane use, both at CRRT initiation, and following subsequent membrane changes during use. If a patient is already receiving treatment with echinocandins prior to requiring CRRT, a delay in administering the next treatment dose or starting the patient on CRRT should only be considered if clinically viable. Healthcare professionals are advised to monitor for lack of efficacy when CRRT treatment initiation overlaps with the half-life of the concurrent drugs administered. As adsorption is not specific to caspofungin, this approach should also be considered with the use of other medications with similar properties. Healthcare professionals who are concerned about the potential loss of therapeutic efficacy are recommended to seek advice from local specialists about the availability of fungal antigen testing to allow close monitoring of clinical progression. Specialist infectious disease, medical microbiology and mycology input is available nationally.

Recommendations for healthcare professionals

- Where clinically appropriate, administer caspofungin and other echinocandins at least 6 hours after introduction of a new PAN-based membrane, at the initiation of CRRT or following routine filter circuit set changes
- CRRT should proceed as clinically indicated and should not be delayed or paused solely to facilitate drug administration, unless otherwise deemed necessary by the responsible clinician
- The recommended delay in administration of these medicines for patients receiving CRRT should be considered at all stages of the medication-use process, including prescribing, dispensing and administration, and by healthcare professionals setting up and carrying out the CRRT

- Utilise specialist pharmacist, infectious disease, medical microbiology or mycology input if you are concerned about potential loss of therapeutic efficacy
- Verify the type of CRRT membrane used particularly when initiating echinocandin therapy
- Consider filter adsorption as a potential cause of treatment failure or subtherapeutic response
- Monitor patients closely for treatment response and seek advice from local infectious disease specialists
- The infectious/tropical diseases service at University College London Hospitals: Outpatient services | Hospital for Tropical Diseases will be able to provide advice on acute fungal infections if required

Recommendations for healthcare organisations
Healthcare providers should review and update local protocols and standard operating procedures to reflect the potential for drug adsorption during CRRT and to include recommendations for timing of medication administration relative to CRRT use, including at initiation of CRRT and subsequent PAN-based membrane changes, where clinically appropriate.

The MHRA have requested that marketing authorisation holders update the product information of caspofungin-containing medicines to inform health care professionals of the suspected risk of sequestration. A DSI has been issued which communicates the key safety messages of this DHPC.

Call for reporting
Please continue to report suspected adverse drug reactions (ADRs) to the MHRA through the Yellow Card scheme.
Please report:

- all suspected ADRs that are serious or result in harm. Serious reactions are those that are fatal, life-threatening, disabling or incapacitating, those that cause a congenital abnormality or result in hospitalisation, and those that are considered medically significant for any other reason
- all suspected ADRs associated with new drugs and vaccines identified by the black triangle ▼

You can report via:

- the Yellow Card website
- the free Yellow Card app available from the Apple App Store or Google Play Store
- some clinical IT systems (EMIS/SystmOne/Vision/MiDatabank) for healthcare professionals

Alternatively, you can report a suspected side effect to the Yellow Card scheme by calling 0800 731 6789 for free, Monday to Friday between 9am and 5pm.
When reporting please provide as much information as possible, including information about medical history, any concomitant medication, timing onset, treatment dates, and product brand name.

When reporting please provide as much information as possible, **healthcare professionals are encouraged to specify the type of membrane used in case of**

CRRT. By reporting side effects, you can help provide more information on the safety of this medicine.

Company contacts: Reporting of adverse reactions, lack of effectiveness and/or product quality complaints associated with the use of caspofungin, including batch/lot number can also be made to the relevant company using the details provided below. If you require further information about caspofungin or have any questions, please contact the relevant MAH using the contact details provided in the table below.

The SmPC, Patient Information Leaflet and DHPC are also available at www.medicines.org.uk/emc or at the location cited in the table below.

Yours sincerely.

RRP

Robert Russell-Pavier
Policy and Economics Director
Medicines UK
robert.russellpavier@medicinesuk.com

Table of Marketing Authorisation Holders and contact points:

MA Holder	Product name and strength	AE reporting contact email	Med Info contact phone number	SmPC/PIL/DHPC location
DEMO S.A., Pharmaceutical Industry	Caspofungin 70 mg powder for concentrate for solution for infusion Caspofungin 50 mg powder for concentrate for solution for infusion	pv@demo.gr	medinfo@demo.gr	https://products.mhra.gov.uk/search/?search=Caspofungin+powder+for+concentrate+for+solution+for+infusion https://products.mhra.gov.uk/search/?search=Caspofungin+powder+for+concentrate+for+solution+for+infusion
Generics [UK] Limited t/a Mylan	Caspofungin 50 mg powder for concentrate for solution for infusion Caspofungin 70 mg powder for concentrate for solution for infusion	pv.uk@viatris.com	01707 853000 (option 1)	https://www.medicines.org.uk/emc/product/726/smpc https://www.medicines.org.uk/emc/product/727/smpc
Hikma Farmacêutica (Portugal), S.A.	Caspofungin 50mg & 70mg powder for concentrate for solution for infusion	portugaleupharmacovigilance@hikma.com	+44 (0) 20 7399 2760.	www.hikma.com/en-uk/products/
Sun Pharmaceutical Industries Europe BV	Caspofungin 50 mg powder for concentrate for solution for infusion Caspofungin 70 mg powder for concentrate for solution for infusion	PV - drugsafetyeurope@sunpharma.com MI - medinfoeurope@sunpharma.com	+44 (0) 208 848 5052	https://www.medicines.org.uk/emc/product/13257/smpc https://www.medicines.org.uk/emc/product/13258/smpc

Tillomed Laboratories Limited, UK	Caspofungin 50 mg powder for concentrate for solution for infusion Caspofungin 70 mg powder for concentrate for solution for infusion	PVUK@tillomed.com	+44 (0)1480 402 400	https://www.medicines.org.uk/emc/product/11277/smpc