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(來函請敘明此檔案號碼) DH DO DIMC/7-30/1
(IN REPLY PLEASE QUOTE THIS FILE REF.)

14 Oct 2026

Dear Healthcare Professionals,

**Continuous Renal Replacement Therapy (CRRT): Consider Delayed Administration of
Concurrent Echinocandins, such as Caspofungin, to Reduce the Risk of Adsorption onto New
Polyacrylonitrile (PAN)-based Filter Membranes**

Your attention is drawn to the following United Kingdom Medicines and Healthcare products Regulatory Agency's (MHRA) announcement that continuous renal replacement therapy (CRRT) is used for managing severe 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 ineffective antifungal treatment.

Summary

Continuous renal replacement therapy (CRRT) is used for managing severe 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 ineffective antifungal treatment 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. This is because adsorption reduces over time as the membrane becomes saturated. The same risk cannot be excluded for other membrane types used in CRRT or other drugs with similar properties. Where possible, it is recommended that echinocandins such as caspofungin, and similar drugs, are administered at least six hours after initiation of PAN-based filter use, and after filter circuit set changes.

Advice for Healthcare Professionals:

- echinocandins, such as caspofungin, may adsorb onto PAN-based membranes used in CRRT which may result in ineffective antifungal treatment
- adsorption risk reduces over time as the membrane becomes saturated
- where possible, administration of antifungal treatments, including with echinocandins and similar

drugs, should be at least 6 hours after CRRT has been initiated 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

- all healthcare professionals involved in the CRRT process and set up, as well as the prescribing, dispensing and administration of caspofungin, should be made aware of this recommendation
- seek specialist pharmacist, infectious disease, medical microbiology or mycology input if you are concerned about potential loss of therapeutic efficacy
- filter adsorption should be considered as a potential reason for treatment non-responders, or sub-therapeutic responses, whilst patients are receiving any concurrent treatment during CRRT
- 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 in the context of this Device Safety Information (DSI)

Advice for Healthcare Professionals to Provide to Patients:

The advice in this DSI is aimed at healthcare professionals in charge of treating and managing patients receiving CRRT. If you have any concerns about this advice, contact your healthcare professional.

Advice for Distributors:

There is no advice to distributors related to this DSI.

Explanation of identified safety issue

CRRT is a slow, 24-hour dialysis method which controls fluid levels via a semi-permeable membrane and mitigates risks associated with rapid solute changes. It is most often used in intensive care units in patients who are critically ill and hemodynamically unstable.

Caspofungin is an antifungal for the treatment of invasive fungal infections in adults and children. It is also used as an empirical therapy for presumed fungal infections in febrile, neutropenic patients. Ineffective antifungal treatment in critically ill patients can have fatal consequences.

The European Pharmacovigilance Risk Assessment Committee (PRAC) reviewed evidence that the polyacrylonitrile (PAN)-based membranes in CRRT can bind caspofungin and decrease its effectiveness. The PRAC recommended to avoid PAN-based membranes in CRRT patients who receive treatment with antifungals, either by swapping filter membranes or using an alternative antifungal. However, the MHRA recommendations for the UK differ following review of the available evidence.

The MHRA reviewed the PRAC recommendations along with additional studies which have since been published. Based on engagement with clinicians and the availability of CRRT machines at UK sites, the PRAC recommendations were not deemed to be feasible in the UK clinical setting. Avoiding caspofungin and other echinocandins is likely to have a serious clinical impact on patients, where this

is a first line treatment for invasive candidiasis and ICU patients are likely to have increased susceptibility to fungal infections. Recommending use of alternative antifungals besides echinocandins may also be limited by sensitivities and drugs resistance to candida.

Studies into the adsorption potential of filter membranes indicate that adsorption is non-specific and likely highest immediately after treatment with a new membrane, or when a filter circuit has commenced, and reduces over time as the membrane becomes saturated. By scheduling drug administration to occur after filter circuit changes, loss of drug may be mitigated.

Where clinically appropriate, the MHRA recommends that echinocandins such as caspofungin are administered at least six hours after CRRT has been initiated or following routine filter circuit set changes. 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.

Whilst PAN-based membranes lend themselves to being more susceptible to drug adsorption, comparative studies with other membrane types have not been conducted, and adsorption cannot be conclusively excluded for other membrane types.

As adsorption is not specific to caspofungin, if a patient is not responding to their therapy whilst receiving concurrent CRRT, interactions with the filter (i.e. binding to the filter) should be considered. Alternatively, different treatment options taking into account potential filter retention, may be sought.

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.

A DHPC has been issued which communicates the key safety messages of this DSI.

Please refer to the following website in MHRA for details:

<https://www.gov.uk/drug-device-alerts/continuous-renal-replacement-therapy-crrt-consider-delayed-administration-of-concurrent-echinocandins-such-as-caspofungin-to-reduce-the-risk-of-adsorption-onto-new-polyacrylonitrile-pan-based-filter-membranes-dsi-slash-2026-slash->

In Hong Kong, there are registered pharmaceutical products containing the drug class of echinocandins, including micafungin (one product) and anidulafungin (one product), and are prescription-only medicines; while there are no registered pharmaceutical products containing caspofungin and rezafungin. So far, the Department of Health (DH) has received 7 cases of adverse

drug reaction with regard to micafungin; and one case with regard to anidulafungin, but these cases were not related to lack of effectiveness of the drugs in patients receiving CRRT. Related news was previously issued by European Medicines Agency, and was posted on the Drug Office website on 6 Sep 2025. Letters to inform local healthcare professionals were issued by DH on 8 Sep 2025. In light of the above MHRA's announcement on the latest new safety information related to the drug class of echinocandins, DH will continue to remain vigilant on any safety update of the drugs issued by other overseas drug regulatory authorities for any action deemed necessary.

Please note that this letter serves as a means for the DH to communicate important new safety information about registered pharmaceutical products with healthcare professionals in Hong Kong and is not intended to serve as guidelines or to replace professional clinical judgement. Healthcare professionals are advised to balance the risk of possible adverse effects against the benefit of treatment.

Please report any adverse events caused by drugs to the Clinical Trials and Pharmacovigilance Unit of the DH (tel. no.: 2319 2920, fax: 2319 6319 or email: adr@dh.gov.hk). For details, please refer to the website at Drug Office under "ADR Reporting": <http://www.drugoffice.gov.hk/adr.html>. You may wish to visit the Drug Office's website for subscription and browsing of "Drug News" (https://www.drugoffice.gov.hk/eps/do/en/healthcare_providers/news_informations/drug_news.html) which is a monthly digest of drug safety news and information issued by Drug Office.

Yours faithfully,



(Clive CHAN)

for Assistant Director (Drug)