whether it may be overcome by higher doses or longer therapies remains to be established.

Eventually, we recommended a prolonged therapy including PPI (40 mg of omeprazole three times daily) and amoxicillin (1 g three times daily) for 4 weeks, which turned out to be successful, as shown by negative $^{13}$C urea breath test, rapid urease test, histopathology, culture and molecular genetic testing 6 weeks after therapy.

Multiresistant clinical *H. pylori* isolates exist in Germany and will probably be increasingly detected in the future. To avoid treatment failures, to minimize the risk of the development of antimicrobial resistance and to reduce costs, we recommend susceptibility testing after the first unsuccessful empirical *H. pylori* eradication therapy. In patients who have already received multiple antibiotic treatments due to unrelated bacterial infections, susceptibility testing prior to the first eradication attempt may be considered. The presented case demonstrates the risk of upcoming difficult-to-treat *H. pylori* infections and underlines the need for ongoing studies to keep antibiotic resistance under surveillance.

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**Transparency declarations**

None to declare.

**References**

glycopeptides with an MIC of vancomycin of 2 mg/L. The MIC of daptomycin by Etest (AB Biodisk) was 0.125 mg/L. Informed consent was obtained from the patient's next of kin and therapy with daptomycin was started at a daily dose of 200 mg/kg; the other antibiotics were stopped. The high dose of daptomycin was chosen because of the elevated volume of distribution (which is typical of septic patients, together with lower plasma albumin concentrations) and because polysulphone daptomycin clearance is higher than for other types of ultrafiltration. It was not possible to determine plasma concentrations of daptomycin, and we therefore decided to monitor plasma concentrations of creatinine phosphokinase (CPK), aspartate aminotransferase, alanine aminotransferase and lactate dehydrogenase to exclude myopathy, a well-recognized adverse effect of daptomycin. Since CPK can be eliminated by CVVH, we also measured the ultrafiltrate concentrations of CPK. The plasma concentration of CPK always remained ≤200 IU/L (normal: 50–397 IU/L) and the ultrafiltered CPK concentration never exceeded 86 IU/L. The patient's condition improved and therapy was discontinued after 14 days.

Dosing of antibiotics for patients in intensive care can be challenging, particularly when they undergo renal replacement therapy. Ideally, plasma concentrations should be checked regularly, but this may be impractical in real time. Data from in vitro models of CRRT suggest that a substantial amount of daptomycin can be removed. Since we could not monitor antibiotic concentrations in order to avoid subtherapeutic exposure, we decided to use a higher daily dose (8 mg/kg) and no adverse effects were demonstrated. Despite the limitations of this report we suggest that higher doses can be given safely in CRRT, but patients should be closely monitored for evidence of myopathy. Further studies, with plasma monitoring, are required to refine dosage regimens for CRRT.

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**References**

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**Posaconazole cerebrospinal concentrations in an HIV-infected patient with brain mucormycosis**

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Sir,
The blood–brain barrier (BBB) is known to selectively decrease the transfer of several xenobiotics into the CNS with a significant effect on the concentration of antimicrobial drugs at the site of action. Posaconazole, an orally administered triazole, has enhanced in vitro activity against the Mucorales, with reported MIC90s of 1 to ≥4 mg/L. However, posaconazole monotherapy cannot be recommended for primary treatment of CNS mucormycosis because of limited pharmacokinetic data, pharmacodynamic concerns and the results of some experiments in murine models, although data from open-label salvage studies suggest that posaconazole is effective when patients are refractory to or intolerant of polyenes. Two of four reported cases showed very low to undetectable posaconazole levels in CSF, disruption of the BBB was suggested as the mechanism underlying the striking differences in the reported CSF-to-plasma ratios (2.4 to <0.01).

We describe the case of a young West African presenting with weight loss and left foot palsy (with external popliteal sciatic nerve impairment), affected by type 1 diabetes, on insulin therapy and showing moderate chronic renal impairment (creatinine 1.3 mg/dL, estimated glomerular filtration rate by the Modification of Diet in Renal Disease equation 50 mL/min/1.73 m2). An HIV test revealed 2,356,000 copies/mL were found. Brain magnetic resonance imaging (MRI) revealed multiple contrast-enhancing subcortical lesions with one large hypointense area in the right frontal lobe with perilesional oedema and mass effect. A stereotaxic biopsy showed very low to undetectable posaconazole levels in CSF; 2,34 mg/L.1 However, posaconazole monotherapy was not recommended. The concentration of posaconazole in CSF was 1.3 mg/L.

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