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Acute Myeloid Leukemia with Central Nervous System extension and subdural seeding of Vancomycin-resistant *Enterococcus faecium* after bilateral subdural Hematomas treated with subdural Daptomycin administration

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We present a rare case of comorbid relapsed acute myeloid leukemia (AML) with involvement of the central nervous system (CNS) and subdural seeding of vancomycin-resistant-*Enterococcus faecium* (VRE). The safety profile, treatment approach with pharmacokinetic considerations, and evaluation of success for bilateral subdural administration of daptomycin after subdural hematoma is assessed. A 45-year-old male with history of AML who underwent chemotherapy (induction with 7+3) was admitted to oncology with relapsed AML confirmed by bone marrow biopsy, complicated by neutropenic fever and VRE bacteremia. After acute neurological changes with image confirmation of mixed-density bilateral subdural hematomas secondary to thrombocytopenia, the patient was admitted to the neurosurgery unit and underwent bilateral burr-hole craniotomies for subdural evacuation with placement of left and right subdural drains. Culture

of the subdural specimen confirmed VRE seeding of the subdural space. The patient received the first dose of daptomycin into the bilateral subdural spaces two days after evacuation and was noted to have acute improvement on neurological exam, followed by a second administration to the left subdural space 5 days after evacuation with bilateral drains pulled thereafter. In this patient, the complication of relapsed AML may have contributed to the rare extension of VRE into the CNS space. Screening for patients at risk of AML with CNS involvement and addressing coagulopathy and risk of infection may help mitigate morbidity. Bilateral administration of subdural daptomycin bolused into the subdural space was tolerated and possibly contributed to the patient's neurological improvement during an extended hospital course.

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