**Online supplementary material**

***Description of the invasive fungal infection (IFI) cases***

Two patients experienced proven deep seated invasive fungal infections during the study period.

One female adolescent had a highly malignant osteosarcoma of the right distal femur with pulmonary metastases. The first diagnosis of the disease was made in October 2016. The osteosarcoma broke into the knee joint and infiltrated the lateral tibial plateau, the musculus quadriceps femoris, the biceps femoris caput breve muscle and the gastrocnemius caput lateral and medial. Prior to the start of neoadjuvant chemotherapy, a single-lumen Broviac catheter was surgically implanted. Neoadjuvant chemotherapy referring to the COSS Registry of the German Society for Pediatric Oncology and Hematology (GPOH) with two cycles of adriamycin and cisplatin and four cycles of high-dose methotrexate. After chemotherapy, the patient experienced oral thrush, which is why she received calculated fluconazole as an antifungal therapy for ten days. In the case of a clinically unsatisfactory response to chemotherapy (pain, swelling), a control MRI was performed, which did not show any significant tumor response. After intensive interdisciplinary discussion and detailed information of the patient and her legal guardians, an amputation of the thigh was performed in March 2017 approximately 25 cm above the knee. After this operation, the patient experienced a postsurgical local deep tissue infection of the femoral stump. Invasive samplinng yielded *Staphylococcus epidermidis* and *Candida albicans*, whereupon the patient was treated with teicoplanin and Fluconazole (2 days). Since both pathogens were still detectable in the wound exudate, antibiotic therapy was extended to daptomycin and caspofungin. Eventually, wound revision with bony resection of the thigh stump of 4 cm was performed and the wound closed.

Systemic treatment was continued with daptomycin and caspofungin until May 2017. Until then, the patient had received caspofungin for 24 days. Wound revisions with debridement and Vacuseal™ dressing were necessary several times. Subsequently, a two-stage operation was performed to remove the pulmonary residual metastases. No vital tumor cells were found in the first right-sided resection. At the beginning of June 2017, an atypical resection of the left lower lobe and the lingula was performed, in which four vital metastases were removed. After two doses of methotrexate, the patient experienced renewed pain in the residual limb and local redness. MRI revealed two soft tissue abscesses and extensive inflammatory changes, all in all consistent with osteomyelitis. Treatment with teicoplanin, ciprofloxacin and caspofungin was started again. Antibiotic therapy was continued and intravenous chemotherapy was discontinued to allow healing and preservation of the femoral stump. The patient then received metronomic oral chemotherapy with trofosfamide and idarubicin for 10 days and subsequently a total of 11 blocks of trofosfamide and etoposide. Under this therapy, the inflammatory changes gradually decreased. The antifungal therapy with caspofungin (41 days of therapy) was then switched to oral fluconazole at the beginning of August. The antibiotic therapy with teicoplanin was continued. The outpatient oral antifungal therapy with Fluconazole was discontinued in December 2017 after a total of 138 days. During the 10-day therapy breaks, linezolid per os was administered instead of intravenous teicoplanin from February 2018 onwards. In the case of a significant decrease in inflammation and persistent complete remission, chemotherapy was continued with trofosfamide only from March 2018 onwards, while etoposide administration was discontinued. The Broviac catheter was finally removed in June 2018 and the patient was discharged into rehab. Currently (April 2020), this patient is in her first sustained remission and is coping well with her transfemoral prosthesis in everyday life and sports.

Another patient who, however, had a secured IFI prior to the period of the internal audit, which should be mentioned here. The then 22 week old patient developed pulmonary legionellosis and invasive aspergillosis after a long period of leukopenia and lymphopenia during the induction therapy of the treatment of his acute T-lymphoblastic leukemia. This patients has not received antifungal prophylaxis during his induction chemotherapy despite prolonged granulocytopenia and dexamethasone, since he has always been cared for in a room with H13 HEPA-filtered air supply. This case has been published after successful treatment of invasive aspergillosis and legionellosis [1]. Within this internal audit the mentioned patient received prolonged secondary prophylaxis with L-AMB.

1. Furtwangler R, Schlotthauer U, Gartner B et al. Nosocomial legionellosis and invasive aspergillosis in a child with T-lymphoblastic leukemia. International journal of hygiene and environmental health 2017; 220: 900-905