P1581
Paper Poster Session
Antifungal drug treatment

Micafungin serum levels in critically ill patients on continous venovenous haemodialysis using high cut-off membranes (CVVHD-HCM)

Jesus Fortun Abete*[1], Maria Teresa Tenorio[1], Santiago Grau[2], Pilar Martín-Dávila[3], S. Saez[1], Antonio Gomis[1], Vicente Pintado[3], N. Martinez-Castro[1], Javier Cobo[4], Fernando Liano[1]

[1]*Hospital Ramon Y Cajal, Madrid, Spain*

[2]*Hospital Virgen DEL Mar, Barcelona, Spain*

[3]*Hospital Ramón Y Cajal, Madrid, Spain*

[4]*Hospital Ramón Y Cajal, Infectious Diseases Service, Madrid, Spain*

Background: Micafungin (MCF) has shown poor removal by continuous renal replacement therapy (CRRT); however, it is not known whether candins can be removed by CVVHD-HCM. In critically ill patients with septic shock CVVHD-HCM have a potential benefit because it has a high cut-off membrane that purifies substances with molecular weight up to 45 kDa, including pro-inflammatory cytokines.

Objective: to explore the pharmacokinetics of MCF in patients requering CVVHD-HCM.

Material/methods: On day 4 (steady state) of MCF therapy (100 mg/day) blood samples from arterial pre-filter, venous post-filter ports and drainage effluent samples were collected at the start and end of the infusion (1 hour) and at 4, 12 and 24 h. MCF concentrations were determined using HPLC. CVVHD-HCM was performed using polyarylethersulfone hemofilters (Septex®, Baxter S.L.). This study was funded by a research grant from Astellas

Results: MCF serum levels were obtained in 9 patients admitted in intensive care units receiving CVVHD-HCM and MCF for suspected or confirmed candidiasis. Median (range) age was 53.6 (28-80) years. Values for SOFA and Candida score in all patients were ≥ 8 and ≥ 4, respectively. Analysis obtained with the first 4 patients included in the study are shown in the next table:

	Patient#1 (weight: 200 kg)			Patient#2 (weight: 100 kg)			Patient#3 (weight: 60 kg)			Patient#4 (weight: 63 kg)		
Day +4 of MCF	pre	post	D_e	pre	post	D_e	pre	post	D_e	pre	post	D_e
start MCF infusion (0h)	0.6	0.6	<0.2	1.5	1.7	<0.2	9.9	8.9	0.4	8.9	8.6	<0.2
end MCF infusion (+1h)	5.2	5.0	<0.2	15.5	15.9	0.2	24.0	23.5	0.4	22.4	21.0	0.3
at 4h	2.9	2.9	<0.2	9.8	10.5	<0.2	17.4	16.9	0.2	16.0	15.3	0.2

at 12h	2.3	2.2	<0.2	6.6	6.1	<0.2	11.2	11.3	<0.2	11.3	11.9	<0.2
at 24h	1.3	1.3	<0.2	4.0	4.0	<0.2	6.4	6.6	<0.2	8.9	8.7	<0.2

micafungin (MCF) concentration (μg/ml); pre: arterial pre-filter port; post: venous post-filter port

D_e: drainage effluent

Conclusions: Similar concentrations of MCF were obtained both in post-filter and in pre-filter ports. These findings, together with the practically undetectable levels of MCF in the effluent, pointed out that MCF is not significantly removed by the use of CVVH-HCM. The preliminary data of this study suggest that an adjustment of the MCF dose is not required in septic patients treated with CVVHD-HCM.