Polymyxin B and haemofiltration in an adolescent with leukaemia

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Sir,

Sandri et al. described the clearance of polymyxin B recently in two patients during continuous venovenous haemodialysis, but data during haemofiltration are not available.

An adolescent with relapsed (high-risk) acute lymphocytic leukaemia received a stem cell transplant and developed persistent shock within 24 h. The patient was anuric and received renal replacement therapy (RRT), as well as vaspressors and polymyxin B for presumptive multidrug-resistant, Gram-negative bacterial sepsis. The polymyxin B dose was variable during the first week of RRT due to changing renal function and support. A dose of 100 mg (1 mg/kg/day) polymyxin B by intravenous infusion was given on days 11 and 12 of RRT. On day 13 of RRT (continuous venovenous haemofiltration via a Prismaflex system with an M100 haemofilter and Prismasol BGK 4/2.5 replacement fluid), post-filter (before replacement fluid) and in the ultrafiltrate (two patients during continuous venovenous haemodialysis, but data during haemofiltration are not available.

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An adolescent with relapsed (high-risk) acute lymphocytic leukaemia received a stem cell transplant and developed persistent shock within 24 h. The patient was anuric and received renal replacement therapy (RRT), as well as vaspressors and polymyxin B for presumptive multidrug-resistant, Gram-negative bacterial sepsis. The polymyxin B dose was variable during the first week of RRT due to changing renal function and support. A dose of 100 mg (1 mg/kg/day) polymyxin B by intravenous infusion was given on days 11 and 12 of RRT. On day 13 of RRT (continuous venovenous haemofiltration via a Prismaflex system with an M100 haemofilter and Prismasol BGK 4/2.5 replacement fluid: blood flow 220 mL/min, pre-filter replacement rate 1500 mL/h and post-filter replacement rate 500 mL/h), trough concentrations of polymyxin B by HPLC drawn pre-filter (after replacement fluid), post-filter (before replacement fluid) and in the ultrafiltrate were 123.3, 117.2 and 0 ng/mL, respectively; these levels were measured when the haemofilter had been in use for 42 h. The extraction ratio was 0.05, the sieving coefficient was 0 and the haemofilter clearance [extraction ratio x blood flow x (1 – haematocrit)] was 8 mL/min; RRT clearance was thus exclusively via haemofilter adsorption. Further data regarding haemofilter sieving and adsorption of polymyxin B are needed.

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Transparency declarations

None to declare.

References