
A MULTI-CENTER, RETROSPECTIVE COMPARISON OF THE NEPHROTOXIC EFFECTS OF AMPHOTERICIN B LIPID COMPLEX AND LIPOSOMAL AMPHOTERICIN B

McKechnie M, Rotstein C, McTaggart B, Hamilton Health Sciences, Hamilton, Canada

Background: There are currently two lipid formulations of amphotericin B available in Canada, amphotericin B lipid complex (ABLC) and liposomal AmB (L-AmB). Both of these products have been shown to have favorable nephrotoxicity profiles in comparison to amphotericin B deoxycholate (d-amB), however, it is unclear as to whether there are differences in the renal sparing effects of the two lipid formulations. **Methods:** A retrospective and prospective observational study at 11 tertiary care and one community hospital was undertaken in Canada. Patients 2 years of age or older, who received a minimum of 4 doses of ABLC or L-AmB and were not receiving dialysis were enrolled with subsequent data collected. **Measurements and Results:** 150 patients were prescribed ABLC and 104 patients received L-AmB. The mean daily dose and duration of treatment with ABLC was 285 mg/day for 15.9 days (4.0 mg/kg/day) and L-AmB was 221 mg/day for 19 days (3.3 mg/kg/day). Approximately two thirds of patients had underlying hematological malignancies (ABLC 68.7%, L-AmB 59.6%) and 28% and 22% in the ABLC and L-AmB arms respectively ($p>0.05$) had undergone bone marrow transplantation. The groups were comparable with respect to baseline serum creatinine, prior d-amB use, saline loading, and number of concurrent nephrotoxins. The average net change from baseline to peak serum creatinine was 46.7 $\mu\text{mol/L}$ for patients treated with ABLC (143.4 to 190.1 $\mu\text{mol/L}$) and 42.8 $\mu\text{mol/L}$ for patients treated with L-AmB (138.3 to 181.2 $\mu\text{mol/L}$) ($p>0.05$). The mean change from baseline to end of therapy was 9 $\mu\text{mol/L}$ with ABLC compared to 9 $\mu\text{mol/L}$ with L-AmB ($p>0.05$). An increase of at least 50% in serum creatinine was experienced by 43 (30.7%) of ABLC treated patients and 29 (28.4%) of patients in the L-AmB arm; 19 (13.6%) of ABLC and 13 (12.7%) of L-AmB patients had a doubling in creatinine and 3 (2.1%) of ABLC and 4 (3.9%) of L-AmB patients had a tripling of baseline serum creatinine ($p>0.05$). Only 4 (2.8%) ABLC patients and 7 (6.9%) L-AmB patients required dialysis during or within seven days of stopping lipid AmB and 17 (12.1%) and 9 (8.8%) respectively had doses held due to renal effects ($p>0.05$).

Conclusion: We were unable to demonstrate any significant differences in any of the renal parameters we measured between ABLC and L-AmB when used according to current clinical practices. Given potential differences in costs between the two agents, further evaluations of the potential differences in infusion related toxicities and efficacy between the two drugs would be prudent.