

Continuous veno-venous single-pass-albumin haemo-dia-filtration in acute liver failure in childhood

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Introduction: Only 40% of children suffering from ALF survive without liver transplantation (LTX). In adults albumin-dialysis is a liver replacement therapy used to bridge until transplantation. Whether it is useful and safe in childhood is unknown.

Method: 8 children were treated for severe ALF of various origin between 2000-05. They underwent continuous veno-venous single pass albumin Haemodiafiltration (SPAD) (Baxter 11/14√i). High-Flux-Filter sized 70 S up to 100 S were used. Albumin 4,5% solution was used against the stream at turnover rates similar to haemofiltration rates. Measurements: coagulation, plateletcount, bilirubin, bile-acid, ammonium (NH₃), cytokines, blood pressure (BP), hepatic encephalopathy (HE) score.

Results: After 12 hours bilirubin, NH₃ and bile-acid levels decreased in all patients. In 5 patients HE could be reduced by 1-2 degrees. 2 HE remained unchanged. In 6 patients BP remained stable and rose in 2. All cytokines, except IL-2-Receptor, were removed by SPAD. Fibrinogen rose in 2 patients, in whom the own livers recovered. 6 patients were bridged to LTX. Two patients died after LTX .One patient with LTX organ failure recovered. The MOF patient died. All patients decreased their platelet count. No bleedings were seen. One allergic reaction to albumin was observed.

Conclusion: SPAD in children seems to be effective and safe in ALF to stabilise and bridge children to LTX and may avoid LTX by replacing liver function until recovery appears.

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