Poster Sessions

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IN VIVO TEST OF THE COLD DIALYSATE RECYCLING SYSTEM

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Aim: Recently, home hemodialysis is a matter of concern for renal failure patients; it provides them with convenience and time-saving. However, conventional hemodialysis (HD) machine uses dialysate without reuse so that it requires large volume of purified water up to 200L. Thus, the system requires a huge installation space which is not adequate for home hemodialysis.
This research proposed a cold dialysate recycling system that requires a small volume of dialysate lower than 10L through regeneration and recirculation of dialysate by using charcoal.
Methods: A series of *in vivo* tests (every two days, 6 times) were conducted to validate the cold dialysate recycling system equipped to conventional HD using a mongrel dog. Dialysis treatment was based on the following conditions; dialysate volume: 10L, average dialysis time: 285 min, average blood flow rate: 92.44ml/min and average dialysate flow rate: 240ml/min.
Results: When average dialysate temperature was maintained at 8, urea reduction ratio was 59.93±7.31% and creatinine reduction ratio was 52.60±7.0%.
Conclusion(s): It is confirmed that the cold dialysate recycling system is effective for hemodialysis process via only addition to the conventional hemodialysis system. Home dialysis may be possible with only 10L of dialysis fluid regenerated by charcoal columns.

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PATIENTS WITH SYSTEMIC LUPUS ERITHEMATOSUS, END STAGE RENAL DISEASE AND PATIENTS ON HAEMODIALYSIS: EXTRARENAL DISEASE ACTIVITY

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Background: End-stage renal disease (ESRD) and haemodialysis (HD) in patients with lupus nephritis have generally been believed to result in a significant reduction in lupus disease activity. It has been suggested that the activity of SLE decreases because of the immunosuppressive effect of the uremic state and haemodialysis.
Methods: We studied the effect of ESRD and HD on disease activity of SLE patients. Twenty five patients with SLE, lupus nephritis (LN) and ESRD were examined. Patients were selected in two groups. First group: twelve patients with ESRD, defined as a serum creatinine >200 micromol/L for greater than 6 months. Second group of thirteen patients were on HD for more than 6 months.
Results: Comparison of the age did not show differences between the groups. Disease activity was defined as: fever, malar rash, serositis, thrombocytopenia/leukopenia, complement changes, musculoskeletal features, mucocutaneous features, involvement of CNS. In the first group disease activity was noted in 67% patients, and in 54% patients on HD. Duration of LN was shorter in the patients with ESRD-6 years; in the patients on HD was 8.5 years. Most of the patients had complement changes (n=12), 6 had mucocutaneous features, 4 had thrombocytopenia/leukopenia, 3 had musculoskeletal features, 2 had serositis, 5 had fever and one patient had CNS involvement.
Conclusions: Patients with SLE who develop ESRD or receive dialysis therapy continue with extrarenal disease activity. These patients need careful and continued follow-up, and should be treated with appropriate immunosuppressive therapy.

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HEMOSTASIOLOGIC EFFECTS OF ALPHA-1-ACID GLYCOPROTEIN IN ACUTE RENAL FAILURE

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Aim: To investigate disorders of blood coagulation in model acute renal failure and influence of alpha-1-acid glycoprotein.
Methods: 116 white male rats were used in the experiment. Acute renal failure was induced by single subcutaneous injection of mercury (II) chloride in dose 7mg/kg. Alpha-1-acid glycoprotein ("Orosin", Chelyabinsk Blood Transfusion Facility, Chelyabinsk, Russia) was administered intraperitoneally thrice: on 1st, 2nd, 4th days of experiment in summary dose of 450mg/kg. Standard coagulation tests were performed on 5th day of the experiment.
Results: Acute renal failure was characterized by marked hypercoagulation. Standard and kaolin-activated recalcification time were shortened, along with APTT and thrombin time. Antithrombine activity was diminished and fibrinogen content was elevated. Prothrombine time was unchanged. Administration of alpha-1-acid glycoprotein leads to restoration of APTT and recalcification time. Fibrinogen content was reduced compared to renal failure group. Alpha-1-acid glycoprotein failed to restore antithrombine activity or thrombine time.
Conclusions: Alpha-1-acid glycoprotein is capable of restoring some hemostasiologic parameters in hypercoagulable state induced by model acute renal failure.

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SUCCESSFUL PREGNANCY IN A UREMIC PATIENT TREATED WITH SINGLE NEEDLE HAEMODIALYSIS

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Aim: Pregnancy is uncommon in patients on maintenance haemodialysis (HD) and carries a high risk of fetal and maternal complications. Several reports have shown that application of an intensive dialysis regimen (24 hours/week) is associated with improved infant survival and better clinical conditions of mother. We report a case of successful pregnancy outcome in a black 35-year-old woman treated with single needle dialysis.
Methods: The patient started HD (3 times/week) eight years ago. Her clinical history was remarkable for 2 spontaneous abortions, including 1 during second trimester, and for aortic valve replacement. Our goals were: a) to avoid hypotensive or hypertensive episodes during HD; b) to maintain pre-dialysis urea <80mg/dL, serum albumin >3.4g/dL, haemoglobin 10-12gr/dL; c) to administer the best anticoagulant regimen; d) to monitor closely the fetal growth. Because of difficulties in artero-venous fistula, she received single needle HD. The HD frequency was increased to six times per weeks (4 hr per each session), using a polysulfone membrane (2 m^2 surface) and LWH (4000 UI) as anticoagulant. Erythropoietin was administered intravenously during HD to maintain Hb >10g/dL. She was put on unrestricted diet and received vitamin and iron supplements during HD.
Results: At 37th week, a female infant (weight=2.7kg) was electively delivered by Caesarean section without any complication.
Conclusion(s): Single needle HD was able to guarantee pre-dialysis uremia < 80mg/dL and LWH, at the dose of 4000 UI, allowed efficient anticoagulation without complications. Owing to her strong motivation, the patient's compliance toward the intensive HD regimen was good.