

These values compare favorably with the clearance of 30-40 liters in 4 hours conventional hemodialysis which is usually performed on an alternate day basis.¹⁰ HDF also normalized serum potassium, sodium and bicarbonate concentration within 24 hours of initiation of procedure. Other studies have also concluded that HDF is physiologically superior to intermittent haemodialysis (IHD) in correction of azotemia and deranged electrolyte levels.⁷⁻⁸

The most important fact this study has established is hemodynamic stability achieved during fluid withdrawal in HDF. Hemodynamic stability during HDF is presumed to be due to slow and gradual removal of urea and water which allow time to optimize intravascular and left ventricular filling, leading to improvement in cardiac output.^{2-5,10} Both modalities of HDF achieved a significant fluid removal even in critically ill patients without having significant deleterious episodes of hypotension in contrast to hemodialysis where incidence of hypotension is 20-30%^{10,11}. In the present study, most of the patients were vasopressor dependent, therefore, ultra filtration rate was kept below 200 ml/hr so as to avoid hypotension. This ultra filtration rate was low contrary to other investigation, who achieved it in range of 500-1000ml/hr.^{10,11} One possible explanation for this difference may be that most of patients in our study were vasopressor dependent, proving lower blood flow rates leading to low ultra filtration rate. During the period of study the rate and quantity of fluid removal was individualized, depending to hemodialysis, this technique in the graduated bag and fluid removal and solute clearance could be controlled and modified at any time of the day and night, allowing adaptation to the rapidly changing hemodynamic situation of critically ill patients. The second and most important advantage was maintenance of hemodynamic stability during fluid withdrawal.

The most important surrogate marker of dialytic efficiency and safety is the "adequacy of dialysis". According to NCDS¹² dialysis is said to be adequate if value of Kt/v achieved is one or more. In the present study, we calculated Kt/v by using simplified Barth method¹³, which takes into consideration pre, mid and post dialysis blood urea levels. Value of Kt/v in CAVHDF was 1.02 and in CVVHDF it was 1.09. Values of Kt/v in both groups were more than one, thus confirming its adequacy in the management of critically ill patients with ARF. To the best of our knowledge, no other randomized clinical in available where adequacy of CAVHDF and CVVHDF has been compared in cases of ARF.

The most encouraging finding in our study were the high percentage of renal function recovery and survival in critically ill patients with ARF. Of the 30 patients with ARF, 58% recovered their renal function.

A total of 11 patients (36.7) survived and discharged from hospital. The mortality rate of 63.36% is lower than the reported rates for patients with similar APACHE III score. Chen et al¹⁴ in complicated ARF, found a mortality rate of 86% with in APACHE III score >90. In the present study, mean APACHE III score was 10 in both groups. The issue of whether CRRT can lead to improved survival in critically ill patients cannot be addressed by the current study as no control group received alternative forms of RRT as it was considered unethical to subject unstable patients of IHD.¹⁵

Our study suggests that HDF provides better biochemical control of uremia than previously utilized treatment modalities. Haemofiltration is also probably the best available treatment to treat overloaded cases of ARF without compromising their hemodynamic stability. It is relatively simple, safe and is well tolerated. The treatment of choice in critically ill patients with ARF.

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LITERATURE REVIEW

Clinical and laboratory findings and therapeutic responses in children with nephrotic syndrome.

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Nephrotic syndrome (NS) is a clinical entity characterized by massive loss of urinary protein leading to hypoproteinemia and edema. This prospective cross sectional study was performed on 44 children with idiopathic nephrotic syndrome (INS). The objectives were to study the clinical and biochemical parameters at the time of diagnosis of nephrotic syndrome and to study the histopathological distribution of different subtypes of INS and drug response pattern. There were 29 (66%) males and 15 females (34%). The mean age of NS was 4.87±3.24 years. Facial edema was found in 42 (95%), microscopic hematuria in 10 (23%), gross hematuria in 2 (4.5%), and hypertension in 5 (11.2%) of patients. In 17 children who underwent biopsy, focal segmental glomerulosclerosis was the most common pathologic finding (41%). Other subtypes included minimal change in three (18%), membranoproliferative glomerulonephritis in 1(5.8%), diffuse proliferative glomerulonephritis in 2 (11.6%), membranous glomerulonephritis in 1 (5.8%), and diffuse mesangial proliferation in 3 (17.5%) of cases. At the time of hospital admission, peritonitis were present in five (11.4%), pneumonia and upper respiratory infection (sinusitis) in eight (18%), cellulitis in two (4.5%). Among 44 children with NS, 29 (66%) were steroid sensitive cases, nine (20.5%) were steroid resistant and six (13.5%) were steroid dependent. Among patients with steroid sensitive NS, 37% were without relapsers, 38.8% frequent relapsers and 26.4% were infrequent relapsers. These results suggest that there are differences between season of incidence, response to treatment with corticosteroid and pathologic findings in our study and other studies in Iran and other countries.