

Continuous Renal Replacement Therapy(CRRT) in the Developing World: Is there any alternative ?

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Dialysis and transplantation (RRT), originally developed to forestall death in patients with ESRF, have become standard management practice in developed countries. However RRT requires an expert team consisting of at least a nephrologists, cardiovascular surgeon and urologist, in addition to a skilled nursing staff. Therefore, in many areas of the world RRT is considered extremely expensive both in manpower and cost of treatment, with a maintenance cost far beyond those observed in other areas of medical care. In areas where RRT has been introduced to some extent (e.g. hemodialysis and transplantation) despite the lack of effective and skilled teams, rehabilitation is commonly unsatisfactory and results are discouraging relative to costs. Patients undergoing RRT in these areas commonly experience a disproportionate amount of discomfort and suffering which cannot be balanced by the added length of life achieved.

17 years old boy with biopsy proven rapidly progressive (Endocapillary crescentic) glomerulonephritis developed end-stage renal failure (ESRF) despite receiving steroids and cyclophosphamide. He developed symptomatic uremia (anorexia, fatigue, and tachypnea) about 6 months before referral. Laboratory tests at that time showed serum creatinine 10 mg/l, blood urea 360 mg/dL. Since that time he was receiving regular hemodialysis (HD) 2 sessions /week. He received more than one blood transfusions during that period. Both of the parents and the patient considered this form of RRT is not convenient and have disrupted their life and all of them experienced a significant amount of discomfort and suffering. On referral 2 days after HD session the boy has symptomatic uremia (fatigability, and mild tachypnea). The boy was receiving erythropoietin, parenteral iron, one alfacalcidol, calcium carbonate, and frusemide. The boy started a new form of RRT consisting of acacia gum (AG) 1g/kg/day dissolved in fluids and given in divided doses in conjunction with low protein diet (LPD). After 2 weeks from the start of this form of RRT the boy reported improved well being and much more comfort has ever experienced since the onset of uremia. Table (1) shows the effect of this form of RRT on serum creatinine and blood urea. The values of serum calcium, and potassium are expected to be more by other therapies (one-alfacalcidol, erythropoietin, diuretic, etc,..) The family traveled outside the country for and the boy stopped AG therapy, but continued on LPD. After 2 weeks he presented again with symptomatic uremia. Both the parents and the decided to continue this form of RRT rather than returning to regular HD.

	serum creatinine mg/dL	Blood urea mg/dL	Hemoglobin g/L
Post HD (range)	2.7-5.5	82-112	
At the start of therapy	4.5	151	6.5
After 2 weeks	3	118	10.8
After 6 weeks	7.2	110	9.4
After 10 weeks	7.5	103	10.4
2 weeks after stopping AG	9.2	225	5.9

This novel form of RRT has already been reported to children treated by intermittent peritoneal dialysis a long period of dialysis freedom and improved well being[1]. This is first paper reporting HD freedom and improved well being with this form of RRT.

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