COMPARATIVE STUDY OF DIALYSIS PATIENTS OF VARIOUS AGE GROUPS

THESIS

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in internal medicine

By
MOHAMMED MAMDOUH YOUSEF
MB, B.CH.

SUPERVISORS
Prof. Dr. WAHID M. El-SAID
Prof. of Internal Medicine and Nephrology
Ain Shams University

Prof. Dr. SABRY GOHAR
Prof. of Internal Medicine and Nephrology
Ain Shams University

Dr. ESSAM KHADR
Lecturer of Internal Medicine
Ain Shams University

FACULTY OF MEDICINE - AIN SHAMS UNIVERSITY

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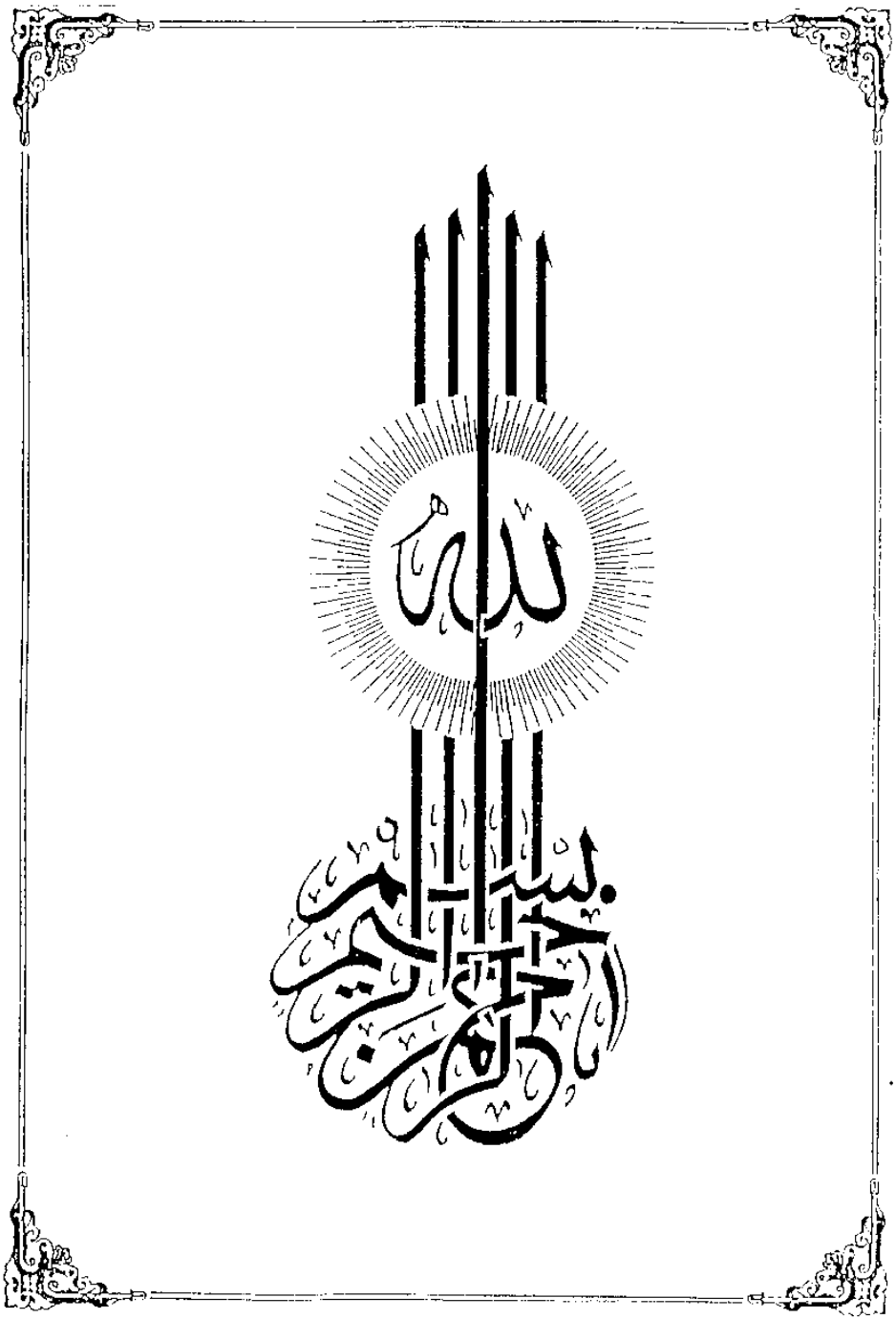

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LIST OF ABBREVIATIONS

Bone p	:	Bone problems
CGN	:	Chronic glomerulonephritis
Cornonary isch	:	Coronary ischaemia
D.M.	:	Diabetes Mellitus
F. Fistula	:	Failed Fistula
Hypo	:	Hypotension
Hypert	:	Hypertension
My infarction	:	Myocardial infarction
Obst urop	:	Obstructive uropathy
P.N.	:	Peripheral neuropathy
Polycystic. K	:	Polycystic kidneys
Pericardial eff.	:	Pericardial effusion
R. Calculi	:	Renal calculi
U.B.	:	Urinary Bilharziasis
U.T.I.	:	Urinary Tract infection.
M	:	Male
F	:	Female

INTRODUCTION
AND
AIM OF THE WORK

INTRODUCTION

Comparitive study of dialysis patients of various age groups

In the last few years there was a remarkable expansion in renal replacement therapy in different parts of Egypt. This expansion did not include only young age group but also involved the elderly uraemic patients.

In the last EDTA (Europian dialysis & Transplantation association proceedings) published 1985 results from Egypt showed that the two years survival rate of elderly Egyptian uraemic patients under regular dialysis to be as equal as the survival rate in the elderly uraemic patients in the most advanced countries while the same source showed a much lower survival rate in young age groups in Egypt compared to these countries.

The old group of uraemic patients is, of course, different in many aspects from the other age groups for example, the pattern or types of diseases which produce the renal failure, the type of care offered to them, the complications which may occur, the financial and socio-economic status, the psychic aspects and type of behaviour, thinking and philosophy and also the amount of work, the load and the stress they are exposed to.

REVIEW OF THE LITERATURE

Dialysis in Children

Experience with dialysis for children has been considerably less than that for adults. A number of technical factors, as well as a smaller patient population needing this treatment, has contributed to a relative lack of information regarding dialysis in the young, (Groshong, 1983).

Scattered use of both hemodialysis (Merrill et al., 1950) and peritoneal dialysis (Swan and Gordon, 1949) was reported in children before 1950. Serious technical problems with the former, related to equipment limitation and use of large extracorporeal blood volumes, severly limited artificial kidney utilization for treatment of acute and chronic renal disease until the mid - 1960s, when large referral centers began developing chronic hemodialysis programs (Fine et al., 1966, and Fine et al., 1970).

Peritoneal dialysis received greater emphasis in the 1960s because of its requirement for less complex equipment, flexibility for accomidation to the small size and special metabolic requirements of children, and a general development of expertise (Segar et al., 1961), (Etteldorf et al., 1962) and Lloyd - Still and Atwell, 1966).

By 1970 peritoneal dialysis was routinely used for treatment of acute renal failure in children as well

as for the treatment of toxin ingestion when renal function was impaired (Dobrin et al., 1971).

Chronic Renal Failure in Children

The age dependency of diseases causing chronic renal failure is less obvious, and the variety of disorders is much greater than acute renal failure (Table 1).

Chronic renal failure is a relatively uncommon problem in children, with an estimated annual incidence in the United States varying from 1.5 - 6/million total pop (Chan, 1980), (Potter el al., 1980) and (Mauer, 1978). Congenital and structural abnormalities of the kidney generally tend to predominate as a cause of end stage renal disease in early childhood, with acquired renal disease more likely in older children and adolescents. There is, however, great variation.

Patients who have congenital diseases such as Juvenile nephronopthisis and familial nephritis (Alport's disease) usually do not develop chronic renal insufficiency until adolescence.

More than half infants with autosomal-recessive polycystic kidney disease, conversly, will develop renal failure in infancy, with the remainder maintaining adequate renal function until late childhood. A high degree of diagnostic acumen and experience is therefore important when determining the etiology of chronic renal failure in infants and children (Groshong, 1983).

(Table 1) :

Causes of Chronic Renal Failure in Children

Congenital Disease

Urinary tract malformations

Renal hypolasia dysplasia

Hereditary diseases

congenital microcystic disease

Cystinosis

Juvenile nephronophthisis
(Medullary cystic disease)

Oxalosis

Cystinuria

Familial nephritis (Alport's disease)

Renal tubular acidosis

Neoplastic Disease

Wilm's tumor

Glomerular/Vascular Disease

Hemolytic - uremic syndrome

Henock - Schoenlein purpura

Renal Vien thrombosis

Membranopraliverative glomerulonephritis

Focal glomerulossclerosis

Renal cortical necrosis

Minimal change nephrotic syndrome

Membranous hephropathy

Systemic lupus erythematosis

Polyarteritis

Familial nephritis

Glomerulonephritis - other

Chronic Interstitial Nephritis

Indications For Dialysis in Chronic Renal failure

Indications for dialysis in chronic renal failure are somewhat complex. Dialysis generally should be initiated in patients with end stage renal disease when it is determined that conservative medical management can be no longer be expected to prevent the serious complications of uremia.

For most children, vigorous predialysis therapy becomes ineffective when serum creatinine levels reach values greater than 10 mg/dl, or creatinine clearance drops to less than 5 ml/min/1.73 m^2 body surface area (Fine, 1981).

Dialysis is frequently intiated in patients with less severe renal failure because of development of uremic symptoms. Patients who develop complications of severe uremia, such as uremic pericarditis, stomatitis, encephalopathy, meuropathy, or gastroenteropathy, should be started on a chronic dialysis program promptly.

While most patients with end-stage renal disease tend to excrete large quantities of potassium in their urine, severe reduction in renal function may result in hyperkalemia. Use of sodium-potassium exchange resins may be helpful as a temporizing measure; however, such treatment is generally not acceptable to patients for long term therapy - Elevation of urea and of other products

of protein metabolism often require reduction of protein intake to 0.5 g/kg/day. High quality protein (a high concentration of essential amino acids) should be used when possible. Congestive heart failure resistant to medical management as well as hypertension, acidosis, and refractovy hyperphosphatemia are relative indications for begining dialytic therapy.

Many pediatric nephrologist begin consideration of chronic dialysis when creatinine clearance drops below 10 ml/min/1.73 m^2 body surface area as a method for preventing the complications of uremia. This provides an opportunity to develop a smooth transition from conservative medical management to dialysis.

Continuing experience with pediatric patients tends to support this impression (Groshong, 1983).

One of the major factors of concern with children who have end-stage renal disease is growth failure, which rapidly occurs as renal function deteriorates. In theory, progressive diminution of growth should be an indication for institution of dialysis (Broyer et al., 1974).

Hemodialysis in Children

Scatered reports of hemodialysis for acute and chronic renal failure (Hickman and Scribner, 1962), (Hutchings et al, 1966) and (William, 1969) in children were published during the 1960s.