RENAL TRANSPLANTATION

A Thesis

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the Master Degree in Internal Medicine

By

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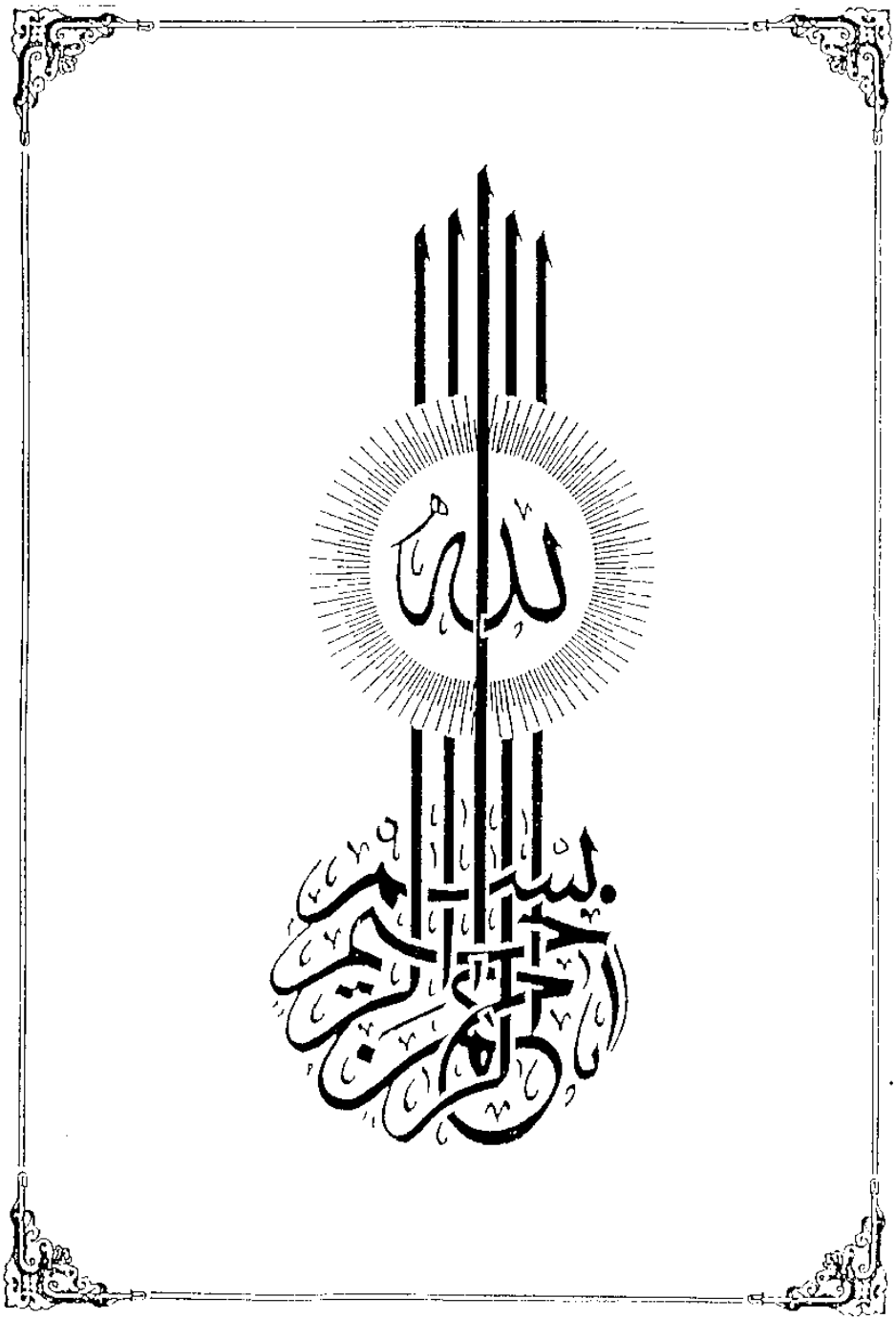

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INTRODUCTION

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Seeing many patients die due to disease destroying their kidneys while the rest of their body is sound, had striken the conscience of the medical people in different medical centres all over the world to do something to save those patients & that was the start of kidney transplantation.

Renal failure may progress over a period of months, years or decades. While chronic hemodialysis may only partially eliminate the symptomatic & physiologic manifestations of chronic uroemia, yet the quality of life for most patients is less than ideal. Moreover, the physical and psychological adjustment of hemodialysis patient are difficult.

On dialysis the occurrence of incapacitating complications particularly acute cardiovascular events associated with accelerated arteriosclerosis are frequent. Furthermore, mortality of dialysis is about 5-8% per year in the best centres & it is probably the most costly means of treatment for end-stage renal failure. (Strauss 1981).

Since the incidence of uroemia is estimated to be 40-85 cases per million per year, maintainance of such expanding population will rapidly exhaust available medical & economic sources. The incidence in Egypt is probably much more than this figure due to the endemicity of urinary schistosomiasis and its deliterious effects on renal structure and function, thus, the most desirable solution for the ever expanding group of uraemic patients, is successful renal Tx. provided no excessive immuno-suppressive with its very serious complications are used.

In this way, the uraemic patient can return to essentially normal life & activity.

The desicion to proceed with renal transplantation (Tx.) is never automatic, but it is based on the desire and motivation of the patient & the combined medical & psychiatric evaluation made by nephrologists, transplant surgeons & psychiatrists who are intimately involved in transplantation problems.

Kidney Tx. is now commonly accepted & well established modality of therapy for end-stage renal failure. Haemodialysis & transplantation are the two basic means of maintaining

life when renal function is chronically below the level of 5% of normal .

Renal Tx. does not invariably substitute for or take procedure over acute or chronic haemodialysis or both in the treatment of renal failure. Invariably, some combination of both hemodialysis & transplant is usually included in the treatment plan for end-stage renal failure patients.

For sometime to come, neither dialysis nor renal transplantation will be available on a scale sufficient to cope with more than a minority of patients entering that dismal state. The development of transplantation must be pushed ahead but lag publicity has entirely lost sight of two simple facts:-

I) The real shortage is not of money but of skilled people to run it.

II) Until the difficulties of heterotransplantation are overcome, the availability of transplantable kidneys is limited.

Therefore, in the present situation, we cannot afford to neglect any conservative measures which

may prevent or postpone the transition from chronic renal failure to terminal renal failure for which alone are dialysis & transplants needed.

But, when the urea or creatinine clearance falls permanently below 1.5% to 2 ml per minute , the patient can be saved only by dialysis or transplant, and this is the terminal renal failure. With established chronic cases we must differentiate patients whose renal failure is due to a cause which can be corrected from other whose initial assessment is made to gleomy by dehydration or infection & those who may be called (arrested chronic renal failure) in whom a low level of renal function remains unaltered for years. For these three categories, there is no place for transplantation.

All members of the team: nephologists,urologists, anoethetists, radiologists & social workers meet together to discuss the condition of the recepient & the donor & the feasibility of the operation.

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HISTORICAL ASPECTS

Renal transplantation is still a relatively new therapeutic modality. By (1959), only 23 instances had been reported. The kidney transplants owe much to Alexis Carrel (1905) who established a reliable technique of vascular anastomosis. The first clinical attempt was performed by the Russian surgeon Voronoy, who in (1936) unsuccessfully grafted a cadaver kidney into a patient with mercury poisoning. But the first successful transplant was an allotransplantation in man performed in June 1950 by R.H. Lawler in Chicago, Illinosis, in a woman with polycystic kidney disease having AB type but with no histocompatibility testing or typing and was done with the dead donor (strauss 81).

Peter Medawar (1945) Clarified the basic immunological phenomenon involved. William Koff (1946) who pioneered the first effective hemodialysis machine. Joseph Murray and David Hume (1955), who after filtering steps, established an effective surgical technique in man .

The kidney has been anastomosed to the femoral vessels with a cutaneons ureterostomy.

Immunosuppression was crude so the margin between the effective suppression and the total destruction of the immune system was narrow. When calne (1960) showed the safer efficacy of 6-mercaptopurine, the scene was set for the modern era (Slapak 1981) .

ETHICAL PROBLEMS IN RENAL HOMOTRANSPLANTATION

The practice of medicine has always been accompanied by problems of an ethical nature. Traditional types of ethical problems arise whenever a new method of treatment involving major surgery or other distressing procedures is introduced. In addition, organs transplantation has created a new situation in medical ethics by introducing the unprecedented problems related to the procurement of organs from donors both living & dead. As far as the recipient is concerned one is faced with the problem of using a method of treatment which is of debatable value to this specific patient (Pt.).It is generally accepted that the use of a novel method is justifiable provided that there are reasonable grounds for anticipating that it will benefit the patient.

This is true even when a standard form of treatment exists as long as it is believed that the new method may prove to be better than the old one. In the case of a fatal condition such as irreversible renal failure not only does its gravity justify the use of any treatment which holds promise of saving life, but it becomes difficult on ethical grounds to justify withholding such treatment.

LEGAL ASPECTS OF ORGAN DONATION :

Although the concept of (b ain death) is now generally accepted by the public as well as the medical community but special legislative and judicial action must be done.

A bill must be introduced stating that a pt. can be declared dead if, by usual and customary standards of medical practice, it has been determined that irreversible cessation of brain function has occurred. It is generally acknowledged that legal definition is impossible and that it is even medically undesirable. However, legal recognition that a patient can be declared dead although his circulatory and respiratory systems are temporarily maintained by artificial means is of the greatest importance in organ Tx. Such legislation would greatly increase the number of potential donors, especially if it becomes accepted throughout the country (Brenner 1976).

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INDICATIONS FOR KIDNEY TRANSPLANTATION

The overwhelming number of transplantations in patients with aquired renal disease are carried out for either chronic glomerulonephritis or chronic pyelonephritis. But many patients do not present with a classic history of either disease & it may be sc far advanced at the time of biopsy (if done) that the exact pathogenesis is undeterminable . Yet, all such cases are categorized as end stage renal disease.

Other indications are metabolic diseases & congenital diseases. Table (1) reveals causes of the renal failure for which kidney transplantation has been performed.