

Induction Address - 1994

Development of renal medicine or nephrology in Sri Lanka

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Dr. Selvie Perera, Immediate Past President, Prof. M T A Furkhan our Chief guest, Members of the Council, Past Presidents of the College, Chancellors, Vice Chancellors and Deans of Universities, Hon. Ministers, Members of Parliament, Members of the Diplomatic community, University academics, distinguished guests, ladies and gentlemen.

I am fully aware that this prestigious office carries major responsibilities towards the profession and society. With the help of the new council I hope to take the college activities forward in this, its 27th year.

The objectives of the college as stated in our constitution are:

1. to advance knowledge in medicine and promote research
2. to promote postgraduate education in medicine
3. to promote fellowship among those engaged in the practise of and research in medicine

I am particularly concerned with the changing expectation of society from the medical fraternity. This is because of the changing needs of the society vis-a-vis its values. The content of medical knowledge is constantly changing. New research into medical genetics and the HIV/AIDS epidemic has brought the profession face to face with new challenges both moral and ethical. Medical schools are changing their emphasis from disease oriented medicine to community oriented approach. Our professional body also hopes to review our objectives this year to make it more socially relevant to keep up to the changing mileu in both the profession and soceity.

I have chosen the subject of the Development of Renal Medicine or Nephrology in Sri Lanka. I intend to concentrate and highlight the steps we — in the Department of Clinical Medicine of the University of Colombo and the General Hospital Colombo with the help of several others have taken in the last 15 years to develop this branch of medicine.

In mid 1975 this branch of medicine was highly sophisticated in the West using high tech equipment and it seemed distant to practice it in Sri Lanka. However, I learnt it for the love of its science and always believed that nothing was impossible if you worked hard enough for it. It was only natural and understandable that there was much initial criticism and obstacles from many who did not have a clear idea of the benefits to patient care a more detailed approach to this speciality would bring. Having clearly seen its benefits in the U.K. I decided to introduce modern Nephrology over stages in the last 15 yrs. It has taken lot of effort but it has been a pleasurable experience and much more remains to be done.

After brief epidemiological and historical comments I propose to take you through the various facets of the development of modern nephrology from clinical cases to Dialysis and Transplantation.

I am sure there are large numbers of people out in the community who are crying out for renal services and I do not need an epidemiological survey to prove it. However, such information is important and necessary as the starting point to negotiate with health planners.

Lets begin by finding answers to simple relevant questions.

- Q1. How much renal disease is there in the community?
- Q2. What types of renal diseases are prevalent in Sri Lanka?
- Q3. Is kidney disease on the increase in Sri Lanka?

A. It is difficult to give an honest answer to these questions because there is very little accurate information available to our epidemiologist, statistician and the registrar general's dept. However, using available data with the Ministry and our Unit I will attempt to find some answers. It must be remembered that there would be a bias towards the more serious and complex kidney disease. However, it is necessary at this stage for you to have some idea of common kidney diseases in Sri Lanka and how they present.

¹ *President, Ceylon College of Physicians 1994.*

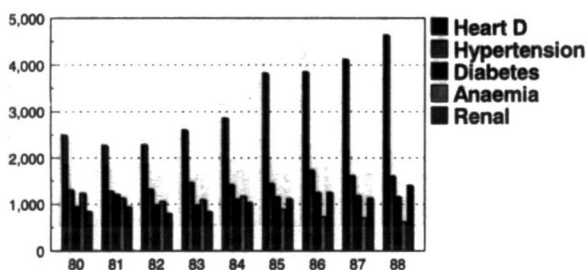
Renal diseases which are common in Sri Lanka are urinary tract infection, nephritis, nephrotic syndrome and calculus disease. All of these are usually reversible but could be recurrent. Out of the severe diseases acute renal failure following snake bite, leptospirosis, poisoning are largely reversible. Chronic renal failure due to glomerular nephritis and pyelonephritis, hypertension and diabetes are irreversible and will cause death unless there is a transplantation.

The common features of renal diseases are dysuria, loinpain, oliguria, swelling of the body, haematuria, proteinuria and hypertension. Depending on the severity of symptoms the patient may take action by either taking home remedies, going to a indigenous practitioner, western general practitioner, and with severe illness they may get admitted to a government or private hospital.

The data available on illnesses is largely from the government hospital admissions which is only the tip of the iceberg.

Mortality and morbidity figures available with the government show a slightly increasing trend of renal deaths. We should however, remember that these figures only represent a small proportion of the true figures. (Figure 1)

Mortality 1980 - 88



Source ; Registrar General

Figure 1

As lay registrars include renal failure deaths under anaemia, diabetes, hypertension and cardiac deaths, the actual number would be estimated around two thousand deaths per year. The numbers who could be transplanted is probably estimated at 500 - 600 per year.

Over the course of 15yrs we have seen and followed up an average of 10000 patients per year in our wards and clinics.

Medical Outpatient Follow-up General Hospital - Colombo Year 1993

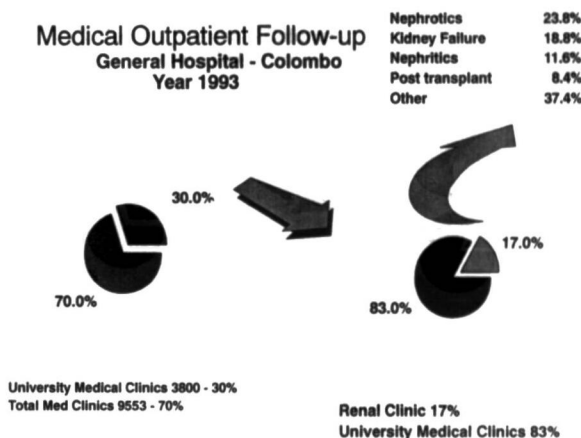


Figure 2

Of the 13553 patients who visited the General Hospital Outpatient Clinics for 1993 the University Medical Unit alone has seen 30% and all other 7 medical units together have serviced 70%. We have identified 17% of our outpatients to have significant renal disease. The total admissions are increasing in the University Medical Unit from 78 - 90 from 4220 to 6251 ie. by nearly 50%. What is more important is the rise of renal admissions by nearly 300% during the same period. (Figure 2)

At this point it is prudent to note that we have an increasing commitment to service renal disease patients. Presently on any one day nearly 50% of our general medical beds are occupied by renal patients. This has become an alarming trend which has modified the disease profile of a general medical ward and needs to be corrected fast to maintain the right balance suitable mix of cases for medical student teaching.

This has been my main argument for requesting the Health Ministry and the Minister of Health to expand our bed strength to separate the renal patients into a nephrology ward.

The increase in absolute numbers of patients so far demonstrated as been admitted or dying of kidney disease is partly due increased awareness and better diagnostic and therapeutic facilities all over the country and partly explained by the increasing population.

In order to proceed to understand development locally it is important to look beyond.

Q 4. What were the new and important elements of renal medicine which made this branch of medicine rapidly progress globally?

1. Availability of diagnostic procedures viz. renal biopsy by the closed techniques using the Tru-cut needle, and the extensive use of the ultrasound examination.

The DTPA Renogram has been a valuable addition. By these methods it was possible to give more accurate assessments of the structural and functional derangement of the kidney and predict and monitor illness behaviour.

2. Availability of life saving procedures (Renal replacement therapy) viz. acute and chronic haemodialysis (kidney machine treatment) and development of other dialysis technique such as chronic ambulatory peritoneal dialysis. Dialysis a method by which accumulation of toxic waste material normally excreted by the kidney is now artificially removed when the kidneys have failed.
3. Availability of kidney transplantation viz. live related kidney transplantation and cadaveric transplantation. Kidney transplantation was the first organ transplantation done globally and was popularised and is now the standard method of treatment of kidney failure. All other types of transplantation eg. of the Heart, liver, heart and lungs, pancreas, kidney and pancreas have all benefited by the experience gained with kidney transplantation.
4. Lithotripsy — This has made life easier for patients with kidney stones.

Now let us consider in detail how renal medicine developed in Sri Lanka. The earliest report of renal disease in Sri Lankan literature is one from Dr. Lionel de Silva appearing in the Journal of the Ceylon branch of the British Medical Association published in October 1927 — Titled "Important Factors in the Aetiology of Renal Disease and the local difficulties in the treatment of the same". It is interesting to note Dr. De Silva's observations on management of kidney diseases and he goes on to say "the majority of inhabitants in this country appear to be temperamentally incapable of securing minds rest!" Are we any better now?

Q 5. What was the state of the art of Renal Medicine in Sri Lanka in 1978 — 50 years after Dr. Lionel de Silva?

- A. A few physicians and paediatricians had a renal interest. Renal biopsies were done rarely and that too largely by open operation. Acute Peritoneal dialysis done in a few large hospitals sparingly. A basic model of a haemodialysis machine had been put together by a Thoracic surgeon Mr. A T S Paul and acute haemodialysis had been done and reported on one patient (Thanabalasundaram, Fernando et al) in the late 1970s. No further data was available on the use of this machine. One donated haemodialysis machine which was hardly used was kept safely

in a Urology Ward. One Surgeon (Late Dr. Bartholomaeus) was courageously carrying on Home Haemodialysis for several years using a Kiiil multi-point haemodialysis machine and helped by his wife and this is the first instance of a home dialysis patient in Sri Lanka.

Serum Creatinine investigation — which was of pivotal importance in assessing renal function was done only once a fortnight at the General Hospital Colombo.

Renal clinical research was hardly presented at the professional meetings or published. A survey of the bibliography (Uragoda et al) from 1811 to 1980 which includes publications and communications in both nephrology and urology put together accounts for less than 30 in over 170 years.

There was no specialist renal journals in any of the medical libraries in Sri Lanka.

Thus it would appear that nephrology was practised largely based on clinical findings without sufficient biochemical, histological support and clearly a diagnosis of renal failure would spell death at that time. Many patients with snake bite and leptosprosis died of acute renal failure for want of dialysis facilities.

I would now like to take you through some of the common nephrological problems we see in summary fashion to give an overview of this speciality.

Acute Nephritic Syndrome

Acute Nephritis is characterised by sudden appearance of a puffy face, red or turbid urine, reduced urine output, high blood pressure and high blood urea in a previously healthy person usually a school going child of 7 - 8 yrs old. We also see this malady presenting amongst young adults.

Acute Nephritic Syndrome or acute Nephritis is an immune mediated disease secondary to streptococcal infection. In our ongoing study in adults ulcers in the low half of the legs and feet seem to be a more important predisposing factor. In the paediatric population the predisposing infections seem to be largely secondarily infected scabies. Definite evidence of streptococcal sore throat is an uncommon finding in our patients. Over 85% of patients do well and revert back to normality within 3 - 6 months. Occasionally these patients can have severe nephritis and heart failure needing haemodialysis to save life. It is becoming less common compared to 15 years back which is probably due to improved socioeconomic conditions of the people resulting in reduced overcrowding rather than early detection and treatment.

Nephrotic Syndrome

Nephrotic Syndrome is characterised by massive swelling of face and body and passage of large quantities of protein in urine.

The introduction and popularisation of the Tru-cut closed renal biopsy technique has been a very useful input in the management of these patients. We have so far done over 2000 biopsies since 1978. This technique was introduced in the 1960s in the U.K. there has been no reports of its regular use in the care of patients locally. It has replaced the open operation technique which left the patient with a long scar and several days of hospitalisation. It is now possible to tell you the types of nephritides in the country and in individual cases to use appropriate treatment schedules for different histological types and to offer prognosis to patients and relatives as to the possible cause of the nephritis. It is now routine for many of our physician colleagues to refer cases for histological assessment in adult cases.

We have therefore put an end to vaguely prescribing different doses of Prednisolone and other immunosuppressive agents to adult patients with nephrotic syndrome. We have brought relief to many persons and their families by taking off a large amount of uncertainty by more accurate prognostication.

We have introduced new modalities of therapy for different types of nephritides giving the benefit of modern therapeutics to our local patients as soon as it became acceptable in international scientific fora.

Over the years I have silently given of my time to a large number of children from the Lady Ridgeway, Sri Jayawardenepura and several other hospitals in the country. Difficult nephrotic children needing biopsies are often admitted amongst our adult patients for biopsy. I am happy that we have now younger paediatricians taking on paediatric nephrology as a field of interest.

SLE Renal Disease

SLE or Systemic Lupus Erythematosus is an auto-immune disease which affects many organs (a multi-system disease). We are following up a large group of over 100 such patients. Renal disease is well known to cause death in this group. Chandrika Wijeratne et al studied the clinical profile in our group and presented data in which 70 of the patients had renal disease. Subhashini Jayawickrema, Preethika Angunawala et al in our group have studied the detailed histology of renal disease in SLE and classified according to the WHO guidelines having made it easier for our management strategies. In our setting it is now less common for patients to go into renal failure if they present to us early enough with SLE

renal disease. Even in our transplant programme of 150 patients we have only 2 patients with SLE renal failure.

Polycystic Kidney Disease

Polycystic Kidney Disease is a familial kidney disease acquired genetically in which several members of a family develop multiple fluid filled cysts which slowly destroy both kidneys over 20 - 30 years leading to kidney failure.

During my sabbatical year at the University of Oxford I spent sometime doing DNA analysis of patients from Singapore and Sri Lanka of polycystic kidney disease. It is known in the west that abnormality of chromosome 16 is seen in the majority of families but in the rest there is genetic heterogeneity. We demonstrated linkage to chromosome 16 in several families of both these countries similar to the west. However, further work was necessary to determine the homogeneity of mutations. Whilst this continues in Oxford it is hoped that it will ultimately lead to analysis of molecular defect in adult polycystic kidney disease when a candidate gene is found. We have set up an interest group within our Faculty in collaboration with the Genetics Department and the Department of Molecular Biology to study our local PCK families in more detail.

Snake Bite Renal Disease

We have been interested in Snake Bite and in particular its renal effects for several years. We have always been concerned with the inaccuracy which creeps into any research presentation when Snake identification is in doubt. With the encouragement of our snake guru Prof. David Warrel and the SLMA we have the OX-COL project between Oxford and Colombo University. We are currently in the process of collecting snakes and the clinical picture so that we have no doubts about the snake identification. Dr. Ariyarani is currently completing an M. Phil on a clinico-epidemiological study. The next phase of this study is to study the renal effects of identified snake bites so that documentation will be more acceptable. We have in this study identified clearly that the hump nose viper or "Kunakatuwa" is responsible for considerable renal effects hitherto not well appreciated in literature.

Two other interesting and rare clinical cases we had recently encountered is worthy of recall.

Barter's Syndrome

A 21yr old girl from a fishing village in Negombo was brought moribund with a history of the other two sisters in the family having died of a similar illness at an early age. She was the only living child. We diagnosed this girl to have a rare disease called Barter's syndrome with life threatening hypokalaemia confirmed by kidney biopsy

and instituted appropriate therapy. She has done very well indeed and got married last month. We are grateful to Prof. Colvin Goonaratne for giving us the necessary back up for renal tubular function tests.

Acute Renal Failure Following Acetic Acid Burns

One whom I saw late one night at the Accident Service Intensive Care Unit in severe fluid overload had kidney failure following 22% acid burn injury. He was given sequential ultrafiltration and haemodialysis immediately and then daily for the next 11 days keeping a high urine output and ultimately after a stormy course went back home alive and well. This case has been a valuable learning experience and illustrates that early and intensive action can save lives.

All the illnesses I have mentioned so far can end up in renal failure in spite of all our efforts to contain them. By RENAL FAILURE we mean that the total function of the kidneys is insufficient to cope with the demands on it. This results in an accumulation of toxic waste eg. rising blood urea, creatinine and potassium level leading to the uraemic syndrome.

Renal Failure can be divided as Acute, Chronic and Acute on Chronic. We found the mortality from acute renal failure to be 20 - 30% from all causes and demonstrated the increasing mortality rates with consequent other organ damage using the multiple organ failure index. Acute Peritoneal Dialysis Services and Acute Haemodialysis Services were together organised into the present dialysis unit of the General Hospital Colombo. I was proud to be involved actively in the organisation of this Dialysis Unit in December 1984 and we provide more than 50% of the dialysis work load whilst the other 7 medical units put together use it the rest of the time. Dr. Ramachandran has recently documented the clinical profile and aetiology of patients admitted in acute renal failure to this Unit. Therefore I will not spend much time on detailing our contribution to these patients. I quoted the Acetic acid case just as an example.

We have numerous referrals from the intensive care units of the Accident Service, Lady Ridgeway Hospital, the Maternity Hospitals in Colombo and from all corners of the island. It would be difficult to operate a Coronary Care Unit without a well staffed Cardiology Ward. The same principle holds here. We have taken on this additional work load of Dialysis. In order to save life we have taken on this additional workload with a smile and as a National need but I am afraid we are at breaking point without space, equipment, personnel and resources. One House Officer described our Peritoneal Dialysis Service to the nation as akin to a popular "Jangama Sevaya" as my staff are constantly on the run supervising dialysis in several units concurrently. (Figure 3)

Haemodialysis at the GHC

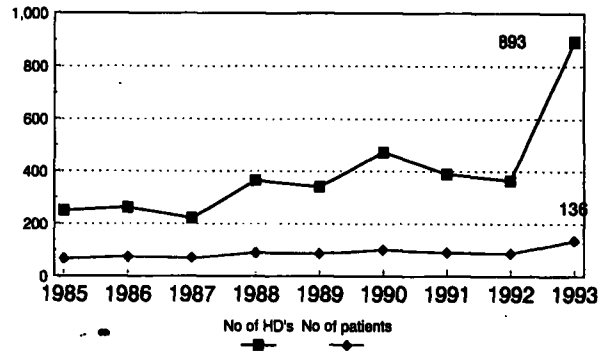


Figure 3

I wish to emphasise that all patients treated at the General Hospital Colombo dialysis unit is done free and the cost is borne by the Ministry of Health. We do not turn away any patient who is very ill and needs life saving dialysis but we are unable to provide long term regular dialysis treatment because of the prohibitive cost of therapy.

CAPD

Chronic Ambulatory Peritoneal Dialysis is another technique where a special teflon PD catheter (The Tenckhoff catheter) is inserted to the peritoneal cavity and the patient exchanges PD fluid every 4 - 6 hours everyday of his remaining life or until he has a successful transplant. We reported the first use of it locally in 1984. We found that this was as expensive as long term haemodialysis and do not have a state sponsored programme. We are currently engaged in evaluating a less expensive intermittent peritoneal dialysis programme with respect to improvement in the quality of life.

Our philosophy has been not merely to extend life with dialysis but only offer treatment if there is a good chance of an individual enjoying a reasonable quality of life.

Thus the next logical step was to introduce renal transplantation.

I could see no way to bring in transplantation into this country except to harness skills available in the University, Health Ministry and the Private sector. This was an uphill task in coordination.

It began by setting up a pilot project in the private sector for 1 year with 1 machine from May 1984. This was expanded to a 4 station private facility by Lanka Medicare Company in May 1985 providing for the first time chronic haemodialysis in Sri Lanka.

This centre has an experience of over 15,000 dialyses and the staff are dedicated and able to detect and

handle early complications which arise during dialysis. Since then there has been a growing interest by others in setting up chronic haemodialysis centres as listed in this table. However, the only centre which gives a comprehensive service culminating in local transplantation is from this unit.

Number of Kidney Machines in the Country

| State Sector | Private Sector |
|-------------------------|---------------------------|
| 95% Acute Dialysis | 95% Chronic Dialysis |
| 05% Chronic Dialysis | 05% Acute Dialysis |
| 1978 - 1 - GHC | 1 (Home dialysis patient) |
| 1984 - 2 - GHC | 3 |
| 1985 - 3 - GHC | 4 |
| 1990 - 4 - GHC | 6 |
| 1993 -10 - 5 GHC + | 9 - 6 Lanka Medicare |
| - 1 Jaffna Hospital | - 2 Nawaloka |
| - 1 Kandy Hospital | - 1 Asiri Hospital |
| - 2 Sri Jayawardenepura | |
| - 1 Home dialysis | |

Total number of functioning kidney machines in the country is 19 (ie. 1/million population).

On the 5th of October 1985 only 4 months after setting up of this unit we coordinated the first live related donor transplantation in this country. We opened the doors to transplantation medicine and am glad to say that we have had an uninterrupted programme doing at least 24 transplants a year the 151st being the latest. In this connection I pay a glowing tribute to my colleague and co-worker Prof. Sheriffdeen not only for his skills and courage but also for providing the necessary surgical leadership at the right time with a hand picked team of several others. Dr. Geri Jayasekara has been in charge of the donor retrieval component. Several from the Ministry of Health — Consultant Anaesthetists, Radiologists, Bacteriologists have solidly supported the programme.

Let us briefly look at the transplant programme and its several components viz

Diagnosis,
Counselling,
Registration,
Funding,
Vascular Access
Donor work up,
Recipient preparation,
Tissue Matching,
The transplant operation,
Immediate post-op care,
Long term follow up care and
Care during complications.

Diagnosis

Glomerulonephritis is probably the commonest cause of kidney failure in this country.

Counselling & Consent

The next step involves breaking bad news to the family and discussing the options in the management, bringing up the possibility of transplantation and giving time for the family to reconsider and come back to our special counselling clinic. This is a very sensitive discussion and an opportunity is given to the prospective donor to be interviewed in private without the rest of the family.

Registration

If the family is willing in principle they are educated about all aspects of transplantation, dialysis, complications, financial commitment, transport and board and lodging problems which may arise in the case of outstation patients. The registration is done as a part of the activities of the Sri Lanka Association of Nephrology and Transplantation.

Funding

Suitable patients are screened and recommended for funding. The present all inclusive cost in Sri Lanka from diagnosis to transplantation is approximately Rs. 300,000/= in comparison an unrelated transplant cost Rs. 600,000 to 700,000/= in India which is after the patient is well prepared and sent from Sri Lanka. In fact when they initially present patients are very ill and need laboratory tests, blood transfusions, fistula surgery, urgent AV shunts/central lines, hospitalisation, hepatitis B vaccination etc and they are only sent when they are physically fit to fly (in about 1 month).

Vascular Access

AV Shunts, Fistulae and Central Subclavian lines are used. The Surgical team has come to our rescue when we are in difficulty.

We are grateful to Dr. Mandika Wijeratne who has joined the surgical team recently.

Donor work up

Extensive tests are done before anyone who has expressed his desire and has the compatible blood group is accepted for donation. We have occasionally had to take psychiatric opinion to make sure that they would accept kidney donation without any post donation psychiatric disorder.

The mean age of the donor was $40 \pm$ SD 12yrs. Male female ratio was 58:82

Relationships

There were 81 sibling transplant donors of which were 46 brothers and 35 sisters. Of the 42 parent to child transplants 36 were mothers. 9 child to parent transplants included 5 daughters and 4 sons. There were 8 second degree relative (aunts, uncles and cousins) transplants.

Recipient Preparation

The patient is dialysed for 4 hours 3 times a week to achieve adequate dialysis time for nearly all Sri Lankan patients. They rapidly feel better and often ready for discharge in 7 - 10 days. They lose the nausea and vomiting and start enjoying food regain their strength within a month and begin to realise that on dialysis alone an enhanced quality of life can be achieved. However, they are dependent on machines and personnel for their survival and soon realise that by reducing the frequency of dialysis they gradually get back their old symptoms. Anaemia is corrected by blood transfusions and if the patient can afford using the drug Erythropoietin Rs 2000/ per injection to be given 3 times/week) which stimulates the patients's bone marrow to produce more haemoglobin.

The average interval between the first dialysis to transplantation was 13 weeks (Range 4 - 45 weeks). Only non-donor specific random blood transfusions were given with an average of 4 transfusions per patient (Range 0-12 transfusions).

I have not promoted long term chronic haemodialysis in Sri Lanka as it is very expensive even for the so called rich people. We do chronic haemodialysis only with respect to transplantation so that at least reasonable chance of good quality life can be attempted having spent about 3 lakhs of rupees. If we put a patient on long term haemodialysis he would have to spend about 3 Lakhs every year for the rest of his life.

Home Haemodialysis programme is unworkable in our setting except in exceptional patients.

We have also provided a holiday dialysis facility for Sri Lankans and others who are on dialysis abroad wanting to spend time in Sri Lanka. The youngest patient we have dialysed is 11 yrs and the oldest is 92 yrs old.

Tissue Matching

Initially we did tissue matching in U.K. with the help of Dr. Oswald Fernando. We then depended on the WHO Immunology Centre in Singapore until such time as our

National Blood Transfusion Service set up a Tissue Typing Laboratory. We are now regularly able to do HLA, B & C. The equipment has arrived for the DR matching to be done which is the most useful tool to predict the compatibility and we are very grateful to Dr. (Mrs.) de Zoysa and her team at the Central Blood Bank.

The Transplant Operation

The first operation was done at Ratnams Private Hospital in October 1985. The first operation at the General Hospital Colombo was done on 05/06/87.

We have so far done 151 transplant operations - 64 at Nawaloka Hospital, 47 at General Hospital Colombo, and 40 at Ratnam Hospital. We are grateful particularly to Dr. Oliver Fernando for making it possible for us to at least do transplantation operations at the General Hospital. He has also helped us to obtain longterm immunosuppressive treatment (except Cyclosporin) to be given free to the transplant patients who follow our renal clinics.

Immediate post-op care

We have with us a group of dedicated nurses who are well trained in the after care of these patients. Patients are nursed in a barrier nursing environment for 6 - 7 days and they are generally ready for discharge by 10 - 14 days.

Immunosuppression

This is the most expensive part of the exercise. The most cost effective approach is used. The long term costs of immunosuppression is around Rs. 10,000/= per month if Cyclosporin is used. Our clinic at the General Hospital now provides immunosuppression with Azathioprine free of charge once Cyclosporin is tailed off.

Long term follow up care

They are followed up once a week for 3 months, once a month for 1 year and by the end of the 2nd year they are seen once in 3 months. A comprehensive annual check up is done including assessment of blood sugar, blood lipid, cardiovascular parameters, eye cheek, in addition to the usual kidney function tests.

Care during complications

This has been a problem area as patients have to be suddenly admitted often to our general medical wards and need urgent investigations, expensive anti-rejection treatment and intensive and supportive therapy. We are finding it an increasingly difficult problem in view of shortage of beds, urgently needed drugs, and facilities. We have lost nearly 30 patients due to infections. We

are in the process of setting up a collaborative study with Dr. Siri Wickramasinghe of the MFI who is interested in opportunistic infections in this population.

Infections in general is the commonest cause of death in the developing countries compared to the developed world where it accounts for a small proportion of cases. Thus transplantation in developing countries is ironically plagued by deaths due to infections.

Survival Data

The patient survival is 82.7% at the end of the first year coming down to 51.1% at the end of 5 years. These figures are about 10% - 15% less than the corresponding figures for a centre in the West. It must be remembered that if the first graft fails due to rejection (we had 6 patients who stopped or reduced the anti-rejection treatment because of the expense) the patient dies unlike in the ideal setting where the patient would get back onto dialysis for a second transplant. This would explain the slightly lower survival figures.

In order to put this branch of medicine on a solid Foundation we had to focus on several other issues to make it survive in the environment of a third world economy. The most important one to address was funding. It was quite clear that renal failure was not a priority health problem for the Ministry and therefore an alternative source of funding largely from the NGOs eg. Lions Club and the Rotary Clubs were the initial funding agencies.

Funding

It was only after appeals to Late President Mr. Premadasa that about 90% funding for local transplantation were given from the President's Fund. There is some funding from the National Lotteries Board after discussions we had with them. Several banks, ETF and Insurance schemes have now recognised kidney transplantation for funding. Patients still need funds for after care which can cost nearly Rs. 10,000/= - 12,000/= monthly until we tail off Cyclosporin in 6 - 8 months. All other drugs are given free by the General Hospital Colombo at the University Nephrology Clinic.

Legal aspects

We collaborated with our Forensic Medicine Dept to obtain the necessary medico-legal advice for the programme. Our Dean Prof. Kodagoda and Prof. Raviendra Fernando have been a source of strength for our activities.

We played a role in activating the passage of the Human Tissues Act of 1987. We are grateful to Dr. Ranjith

Atapattu for getting this piece of legislation through parliament and I am sure it needs review from time to time.

As cadaveric transplantation is the next phase of our programme it became necessary to define death. A consultative workshop was arranged with the help of the WHO, Ministry of Health, Faculty of Medicine and the Sri Lanka Association of Nephrology & Transplantation. We have now agreed on the criteria for brain death for Sri Lanka and perfected the brain death certification form for general use in intensive care units in Sri Lanka. The General Hospital management committee has put this into operation in Colombo and it is hoped that doctors in every intensive care unit in the country will not declare the death of any patient on ventilators, without checking through established criteria laid down to certify brain stem death. This is a necessary pre requisite to starting a cadaveric programme.

Renal Research Lab/Kidney Research Fund

The Departments of Clinical Medicine and Physiology teamed up to have a lab within the University to service this programme initially. We were very concerned with accuracy and easy availability of the necessary tests to run the programme smoothly. It became possible to do the serum creatinine estimation even 3 times a day if we wanted it. We were also ably supported by City Lab Pvt Ltd. We also had to set up a fund (Kidney Research Fund) to be able to run this lab with its own income and to be able to fund renal research. I am glad to say that we have funded the pathology dept to set up immuno-histochemistry studies on renal biopsy specimens and part funded the physiology dept to set up isolated perfused rabbit kidney studies.

What have we done for patients other than the treatment itself?

Kidney Patients Associations

In 1990 we helped the kidney patients to form the SLKPA with Late Mr. Balasubramaniam - Ex Ambassador for Singapore as the first president. They formed themselves into an active group and helped each other fellow patients in several ways. We have ourselves catalysed a project by Rotary Club Of Colombo Mid City who have started collecting funds to build a Hostel for these patients who come from long distances to have dialysis and transplants.

Sri Lanka Association for Nephrology & Transplantation (SLANT)

We have formed a Professional body called the Sri Lanka Association for Nephrology and Transplantation. We have had several educational programmes for doctors

and nurses. Our Association is proud to mention that one of my younger trainees Dr. Anpalahan was recommended by our association and was funded for an International Nephrology Training Fellowship by the International Society of Nephrology and is currently completing his training in Prof. Gavin Beckers unit in the University of Melbourne Nephrology Unit. I have been the Founder President and hope to hand over office to Professor Sheriffdeen our President Elect. I would hope to expand the scope of this organisation to Nephro-Urology and Transplantation at the next AGM.

Post Graduate Training in Nephrology

Although the PGIM has not yet recognised Nephrology for specialised training locally I am glad to say that our growth in the last decade has catalysed an interest in several postgraduates to obtain training both locally and abroad.

All junior medical staff from House Officers to Senior Registrars in General Medicine who go through our unit are exposed to every aspect of renal medicine.

Renal Research

Several renal publications have been presented and published in the last 15 years. Our unit alone has been responsible for well over 30 publications in various aspects of renal disease. Several specialist renal journals including *Kidney International*, *Clinical Nephrology*, *Nephrology*, *Dialysis and Transplantation* are now available in our faculty library.

During my sabbatical year in Oxford I did the initial work of measuring intra-renal blood flow using the ultrasound doppler machine in ARF patients in the ITU setting of the John Radcliffe Hospital. This work formed the initial basis for a thesis submitted by another colleague to whom I passed on the skills.

Thus, ladies and gentlemen, I have tried to give you a brief overview of the development of renal medicine in Sri Lanka in the last 2 decades. I believe we have made an important contribution to the advancement of a branch of medicine.

We have gained national and international recognition for our pioneering efforts under these difficult conditions. Our efforts are stunted by the meagre facilities at our disposal.

As clinicians it is difficult to watch people die when

it is possible to show them a way to live. There are several things around us in our free market economy the benefit of which our government cannot afford to give free to the people. This does not mean that we should deprive the people of a life saving therapy if they can muster the funds. We have amongst us generous people and well meaning voluntary organisations who have come forward to help.

An appeal

I have therefore finally to appeal to those in power in the government health sector to take cognisance of the facts presented and

- (1) Nephrology needs to be recognised as a new speciality and given special unit status by the Ministry of Health.
- (2) this new unit should form the basis for expansion of the activities of the University Medical Unit. We would welcome Health Ministry doctors to work in collaboration with us.
- (3) there is a need to fund a limited chronic haemodialysis programme leading to cadaveric transplantation which will not only reduce the traffic to India for non related transplantation but also reduce the colossal loss of foreign exchange from the country.
- (4) there is a need to set up the Kidney Foundation as suggested in the National Health Plan to regulate standards and monitor all activities and optimise funding.
- (5) Support setting up of cadaveric transplant.
- (6) there is a need to recognise nephrology for postgraduate training by the PGIM and its Board of Study in Medicine.
- (7) Strengthen research activities and support motivated young doctors to register and complete research degrees. Very often it is not funding but leave extensions which is required.
- (8) Support community participation in this instance offering support to the Kidney Patients Association.
- (9) Support Private Sector expansion in Nephrology.
- (10) Support Professional activities of the SLANT.
- (11) Encourage Regional and International cooperation. Regional and International Organ Exchange Network Programmes are within our easy reach.

(12) Finally I visualise this speciality to be consolidated into an Institute of Nephro-Urology and Transplantation run jointly by the University and Health Ministry Staff with the full compliment of facilities for care of these patients under one roof. I hope it will be a Centre of Excellence for this country. It would be a shame to develop the economic infrastructure and achieve newly industrialised country status without at least basic services for debilitating and common non-communicable diseases. Although I firmly believe that prevention is better than cure, having one Quality centre for 17 million people to care for them when they are in distress is basic. Even to produce a Quality postgraduate — all locally we must give the right environment for training. Otherwise we will be left behind further in the explosion of Scientific knowledge.

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