

Dialysis in Malaysia

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Haemodialysis (HD) for end-stage renal disease (ESRD) started in Malaysia in 1966¹ and continuous ambulatory peritoneal dialysis (CAPD) in 1983². Dialysis treatment rate increased from 13 per million population (pmp)¹ in 1990 to 101 pmp in 2005. Prevalence rate increased from 46 pmp in 1990 to 497 pmp in 2005, and by then there were 13,000 patients on dialysis in Malaysia. The number is forecast to reach 20,000 by 2008³.

The other (preferred) modality for treating ESRD, namely, renal transplantation has been available since 1975 but treatment rate remains at 5 - 7 pmp yearly. Prevalence was 63 pmp and there were 1659 patients with a functioning transplant in 2005³. The demand is high but there is a shortage of donor kidneys – both living and cadaveric.

In 2005, 37% of patients were dialysed in government-run dialysis units, 31% in private centres and 32% in non-governmental organisation (NGO) not for profit dialysis centres. Ten percent were on CAPD. NGO centres have existed since the early 1990s but the number increased after 2001 when the government reimbursed RM50 for each HD treatment for deserving patients. Fifty-one percent of dialyses were funded by the government, 23% self-funded, 12% charity and 13% other means³. In 2005 the cost of dialysis was estimated at more than RM300 million. The increase in dialysis provision paralleled the growth of the economy over the last 15 years¹.

The rapid expansion of dialysis in Malaysia is timely but there is inequality in provision. Two states have a prevalent dialysis population of less than 300 pmp i.e. Sabah and Kelantan, five states between 300 – 600 pmp i.e. Pahang, Terengganu, Sarawak, Kedah and Perlis; the rest have a prevalence of more than 600 pmp, being highest in Penang (787 pmp) in 2005³. To address this problem the Ministry of Health (MOH)

opened dialysis units in all government hospitals. In 2004 and 2005 thirty-five MOH units opened mainly in East Malaysia and the east coast of peninsular Malaysia. There is a need for nephrologists to be trained and posted to those areas of low dialysis prevalence.

The number of patients starting dialysis has stabilised in younger age groups but continues to rise in those above 65 years. Such patients have more co-morbid conditions and dialysis units need to take care of their multiple problems including cardiovascular disease. There is a disparity of uptake between males and females (56%: 44% in 2005)³ which has persisted for more than 10 years. In the paper on quality of life (QL) on dialysis in this journal⁴ it was noted that females had lower QL than males and the authors speculate on the cause. The other inequality is between rich and poor. The ones at risk include unemployed adults, those not subscribing to social security or medical insurance and the elderly. The safety net had always been the MOH and NGO dialysis centres.

A worrying phenomenon is the incidence of diabetic ESRD which had increased from 30% in 1996 to 52% of the total in 2005⁵. Malaysia has the unenviable distinction of having the highest percentage of incident dialysis patients with diabetes in the world⁵. The prevalence of diabetes mellitus in Malaysia is 8%. The control of blood sugar in diabetics is suboptimal and if they develop hypertension, control is unsatisfactory⁶. The challenge is to disseminate the importance of controlling diabetes and hypertension to primary care doctors and patients to prevent these conditions.

The National Kidney Foundation of USA had defined chronic kidney disease (CKD) in 2002 stratifying it into 5 stages⁷. From the NHANES III study in USA the prevalence of CKD was 11% in adults which translates to 19.2 million of the US population⁸. There is debate

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whether screening for CKD is useful in the general population or in high risk groups. Screening may take the form of quantitative proteinuria⁹ and measurement of glomerular filtration rate using serum creatinine. For detection primary care physicians are the lynchpins as they are in contact with asymptomatic people from high risk groups.

Nephrologists may have to lead the way in the campaign to prevent ESRD as it is a debilitating condition which shortens life expectancy and reduces the quality of life. Chronic Kidney Disease is a marker of cardiovascular disease and lives may be saved by treating cardiovascular risk factors before they become dialysis dependent¹⁰. The International Society of Nephrology has declared the second Thursday of March as World Kidney Day (WKD). The first WKD was launched on 9th March 2006 and the next will be on 8th March 2007. The main objective is to raise awareness about CKD and to draw attention to worldwide efforts on early detection and prevention of kidney failure¹¹.

For dialysis units the issue is quality of delivery. Haemodialysis is a fairly standard procedure but there are large variations in practice. Frequency of dialysis, blood flow rates, time on dialysis, type of dialyser, adequacy of dialysis vary widely. Intermediate outcomes e.g. haemoglobin, serum albumin, blood pressure, hepatitis C prevalence rates vary. The Private Healthcare Facilities and Services Act of 1998 is being enforced in 2006 and a regulation attached to the Act involves haemodialysis treatment. CAPD outcomes show similar variation. Among 15 CAPD centres in 2005, peritonitis rate ranged from 1 episode in 23.3 patient months to 1 in 64.8 patient months³. The variation in outcomes among dialysis centres may not be due to case mix alone. There may be differences in personnel, structure and processes. Ongoing audit of each centres' performance by the dialysis physician

with quality indicators may be useful e.g. haemodialysis adequacy, CAPD peritonitis rate.

Dialysis is an expensive but life saving long term treatment and attempts had been made to assess outcome¹². In a cost effectiveness study in 2001, CAPD was slightly more cost effective than HD but life span of patients was shorter for CAPD¹³. No randomised controlled trial had ever been successfully done comparing HD and CAPD. In 2005 mortality rate was 9.2% for HD and 14.7% for CAPD². There are suggestions to expand the use of CAPD in Malaysia from 10% to up to 50% as there is less need for infrastructure, overheads and staff. In the paediatric ESRD population, automated peritoneal dialysis is being adopted from 2005 and it will become more common in the next few years³. Results of CAPD treatment have improved with the introduction of twin bag disconnect systems, better expertise and more experience². Liu *et al* reported that patients on CAPD have a better quality of life than those on HD⁴.

Much of the data on dialysis comes from the National Renal Registry (NRR). There have been 13 annual reports between 1993 and 2005. In 2005, 88% of centres treating patients with ESRD submitted data³. The data has been used for international comparison¹⁴, in research papers, as a tool for audit (both local and national) and has been a useful resource for the renal community.

In summary, the challenges facing us include training enough nephrologists, physicians and dialysis paramedics to care for patients, providing for an aging dialysis population with complex medical problems, reducing inequity in dialysis provision, recording, auditing and improving quality and outcome of dialysis, containing costs, encouraging renal transplantation as an option and decreasing the incidence of diabetic ESRD.

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