Rights of chronic renal failure patients undergoing chronic dialysis therapy

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Abstract
The Patient Advocacy Committee of the International Federation of Kidney Foundations (IFKF) has developed a document proposing a set of rights for individuals with end stage renal failure (ESRF). These rights have been approved by the Board of Directors of the IFKF. Twenty rights have been developed and are organized into the following categories: (i) need of treatment and choice of patients; (ii) treatment of ESRF by haemodialysis; (iii) treatment of ESRF by peritoneal dialysis; and (iv) renal transplantation. It is the hope of this Committee and the IFKF that this document will provide a stimulus to more scientific inquiry and discussion as to what rights do patients possess with regard to treatment of chronic kidney disease, regardless of where they live or what may be their economic, social, ethnic or political status.

Keywords: dialysis patients; patients’ needs; patients’ rights; renal patients

Introduction
This document was developed by the Patient Advocacy Committee [Vittorio E. Andreucci (Chairman), Siu-Fai Lui, Yehoshua Lustig and David N. S. Kerr] of the International Federation of Kidney Foundations (IFKF) in an effort to set out the rights of individuals with advanced chronic renal failure undergoing chronic dialysis therapy wherever they live. This paper should be viewed as an early effort to discuss the rights of such patients that, hopefully, will stimulate inquiry and will be modified and added to as other, thoughtful, heads contribute to this subject and as additional relevant scientific data become available. End stage renal failure (ESRF) therapy is expensive and, hence, in some countries has a low priority. Even some of the more affluent countries do not provide readily accessible free treatment to all their patients with renal failure; in 2002, 58% of UK haemodialysis providers had no vacant staffed slots for new patients [1] and in the USA there has been discussion as to whether the Medicare system, which provides public funding for patients with renal failure among others, should be modified as the post-WW2 ‘baby boomers’ reach old age [2–5].

While acknowledging these realities, we set out our view of the minimum standards that must be met to provide a high level of care for patients with ESRF. These may require modification in response to local circumstances or to new research data, but we hope that they will help doctors in all countries to argue for sufficient resources for their patients with renal failure.

Need for treatment and choice of patients
Right 1: fair selection
Ideally all patients who can benefit from dialysis should be offered it free of charge. However we acknowledge that many countries cannot afford the substantial cost of treating all patients with renal failure by dialysis and transplantation. The problem for poorer countries is exacerbated by their higher incidence of renal failure. Some mode of selection is then inevitable; it was indeed practised in many richer countries in the 1960s to 1980s. There is no consensus on the selection criteria, but in our view the following principles should be followed.

The aim of selection should be to use scarce resources to provide maximum benefit. That involves selecting for treatment patients who are likely to enjoy a good quality of life. Selection should not be influenced by...
Race, colour, creed, caste or political affiliation. Age per se should not be a criterion. Since the elderly are more likely to have co-morbidity, a preponderance of younger patients is likely but not inevitable, since many elderly patients enjoy a good quality of life [6]. Selection should be the responsibility of the nephrologists and their team who are best qualified to judge prognosis. Wealth and social standing are not reasons for selection for government-funded treatment. However, if the only way of obtaining regular dialysis is by payment in a private medical system, patients able and willing to pay the costs should be allowed to do so. Private dialysis units (non-profit or for-profit) are as acceptable as public dialysis units, provided that the patients are treated to the same standard as in public dialysis units, and without additional cost.

Right 2: timely selection

This demands unimpeded access to the main dialysis modalities, which in turn requires planned expansion of facilities in line with prediction of need. There should be no ‘waiting list’ for dialysis nor should any patient be assigned to a therapy known to be inappropriate [7]. To make this possible a cost-effective, evidence-based treatment strategy must be devised that allows all patients to experience a good quality of life at relatively low cost.

Right 3: a patient’s voice in the choice of treatment

Haemodialysis and peritoneal dialysis are complementary therapies. Patient preference plays a part in the selection of the dialysis modality, but this is often overridden by other factors that include availability of haemodialysis stations, difficulty in vascular access placement or preservation, technique failure of peritoneal dialysis and the proportion of patients presenting late as ‘uremic’ emergencies. Early referral of renal patients to nephrologists is crucial for treatment choice. Patients must be informed of the advantages and drawbacks of the available types of dialysis, the prognosis and effect on quality of life so that they can make an informed choice on the basis of current information [8,9]. To make choice meaningful there must be sufficient facilities to provide maintenance dialysis to the patient. The choice and timing of treatment should be consistent with patients regaining or maintaining their employment and maximizing their rehabilitation into society.

Patients well informed on the pros and cons of peritoneal dialysis may choose peritoneal dialysis (PD) for more independence and freedom of movement, particularly for travel. Automated peritoneal dialysis (APD) may offer more efficient dialysis than CAPD and may therefore allow patients to remain on peritoneal dialysis longer when natural renal function fails. The Tenckhoff catheter for peritoneal dialysis ideally should be inserted in time to allow for 2 weeks of healing before commencing CAPD or APD.

Patients should be allowed time off from their job for dialysis and extra time off during complications; this requires cooperation from government and employers.

Right 4: privacy and autonomy

Discussion, consultation, examination and treatment should be conducted in ways that protect the patient’s privacy; all communication and records pertaining to their care must be handled confidentially by the medical and other staff. They should know the identity of physicians, nurses and others involved in their care. They are entitled to (i) refuse a recommended type of treatment and be informed of the medical consequences of this action; (ii) consent or decline to participate in research studies and be fully informed before consent [10]; (iii) be treated with respect, dignity, courtesy, compassion and cultural sensitivity; (iv) have any treatment, possible complications and self-care requirements explained in an understandable manner, with sufficient time to ask questions and receive answers; (v) be allowed to obtain a second opinion for a given treatment and ask for consultation by another physician; (vi) designate relatives or friends to be kept informed of their medical condition; (vii) be informed about names, dosages, indications and adverse reactions of all prescribed medications [9]; (viii) be fully informed about the results of laboratory analyses and any tests they undergo.

Treatment of ESRF by haemodialysis

Right 5: easy access to the dialysis unit

Patients should be advised to choose a dialysis unit that achieves a single pool Kt/V of at least 1.2 [11] and is accessible from their homes. For the majority of patients, one-way travel time for the dialysis service should be <30 min. Ideally, units and their satellites should be distributed throughout the country. If the nearest unit is far from the patient’s home, transportation costs should be fully reimbursed. The dialysis unit should be designed for comfort when waiting, as well as dialyzing, and for easy communication for appointments and advice [7].

Approximately half the patients in developed countries have their own transport, the other half being dependent on ambulance or hospital car services [7]. For the majority of ESRF patients, dialysis, once commenced, is for life; therefore dialysis centers should have parking, waiting and changing areas appropriate for long-term repetitive attendance. Transport should aim to make the dialysis day as short as possible.

Right 6: a well equipped and run dialysis unit

Each dialysis unit should have renal trained nurses, ideally some trained in handling cardiac or respiratory
emergencies and some (if not all) competent in haemodialysis procedures. Each haemodialysis station can treat up to four patients with ESRF per day, but time must be allowed for cleaning and disinfecting the dialysis room and machines. A fourth dialysis ‘slot’ also can be provided by overnight dialysis. This has proved an excellent way of combining a high dialysis dose with a prolonged dialysis time [12,13] but the choice of overnight dialysis must be made by the patient, who should not have sleeping problems such as obstructive sleep apnea.

Haemodialysis satellites need similar facilities, good road communications and good parking facilities. A typical 15-station satellite unit will fully utilize 20 car parking places during most of the day. The haemodialysis unit should have air conditioning, emergency electric power and a storage tank with enough water to dialyze patients for one day in case of water supply failure.

Each haemodialysis station should have a dialysis machine which measures and controls ultrafiltration or a weighing bed or armchair for the patient, oxygen supply and adequate lighting. The dialysis machine should be maintained and repaired by technical staff and replaced before it is worn out; in some regions of Italy replacement after 8 years is recommended [10]. A haemodialysis unit should have a reserve dialysis machine for about each 10 machines in use. Water treatment is mandatory (see later) and non-toxic tubing should conduct the purified water to the dialysis machine. The whole system should allow periodic sterilization.

Testing for viral hepatitis should be performed every 3 months in all patients. HBsAg-positive patients should ideally be dialyzed in a separate dialysis area with dedicated haemodialysis machines, but in practice a dedicated side room and equipment are often used. Patients with hepatitis C virus and HIV carriers can be treated in regular haemodialysis units, but should be dialyzed with designated haemodialysis machines [10].

An example of appropriate regulatory control of dialysis facilities is as follows. In the ‘Regione Campania’ of Italy, the Regional Health System aims at a haemodialysis unit with 8–20 dialysis stations possibly in a single large room with at least 8 m\(^2\) for each dialysis station, a large storage room for disposable dialysis equipment, separate lavatories and changing rooms for male and female patients, separate lavatories and changing rooms for male and female staff, waiting room for patients and their relatives, and adequate space for septic and normal waste [10].

**Right 7: regular audit and response to results**

All autonomous renal units and their satellites should report to a National Renal Registry, approved by government and should strive to meet the targets set in their national guidelines.

**Right 8: access to inpatient care in a renal ward**

Where the facilities exist, dialysis patients requiring hospitalization should be accommodated in single-sex areas in dedicated nephrology wards, staffed by nurses trained in renal medicine and dialysis or, when necessary, in intensive care unit medicine. They should have priority for admission to the hospital responsible for their dialysis unit and an ‘open door’ policy for urgent admission to the nephrology ward, if there is one. Priority should also be given for admission to hospitals with the required specialized services (for instance, vascular surgery units for access surgery).

**Right 9: appropriate vascular access for haemodialysis**

The Dialysis Outcomes and Practice Patterns Study (DOPPS) has demonstrated that arterio-venous fistula (AVF) is the most desirable vascular access for haemodialysis [14–17]. It should be the first choice vascular access for all patients requiring haemodialysis. To ensure this, a fistula should be created well before the patient needs to start dialysis {4 weeks according to Dialysis Outcomes Quality Initiative (DOQI) guidelines [18]}. This avoids the need for emergency insertion of catheters, with the potential problems of infection, bleeding, obstruction and vascular damage, and reduces hospitalization. At least 2 weeks are required for an AVF to mature [17]. Overall, the service should aim to have the highest percentage of new haemodialysis patients (80–90%) with natural AVFs. A native AVF produces the highest flows, minimizes sepsis and has the greatest longevity. If forearm veins have been so damaged by blood sampling or cannulation that an AVF cannot be created in the forearm, successful access can be obtained at the elbow. The next alternative is polytetrafluoroethylene tubing (grafts) inserted under the skin [7].

The vascular access should be examined regularly; warning signs include rising venous pressure and falling blood flow during dialysis. When it is blocked, high priority should be given to reopening the blocked vessel. Acute thrombosis of the fistula should be treated to re-establish patency within 24 h by thrombolytic therapy and percutaneous angioplasty, or by immediate surgical revision. Every effort should be made to avoid the need for insertion of central venous catheter access, which is associated with morbidity due to major vessel thrombosis and infection [19].

When vessels are unsuitable for fistula or graft, haemodialysis access can be obtained by using non-cuffed, double-lumen percutaneously inserted catheters. They can be inserted at the bedside in the femoral, internal jugular or subclavian veins and allow immediate use, but should be replaced within 3 weeks by a tunneled cuffed catheter [18]. According to DOQI guidelines for vascular access, chest X-ray is mandatory after subclavian and internal jugular insertion, prior to catheter use, to confirm catheter tip position at the caval atrial junction or the superior vena cava [18].
Right 10: diagnosis and treatment of depression

The onset of ESRF requires adaptation to major life changes. The patient must cope with new dependencies on doctors, nurses and other agencies, perhaps dependence upon a machine, and a restricted lifestyle. These may lead to job loss or change and pressures on family, sexual and social relationships. Lack of adaptation can lead to depression and non-compliance with treatment. Staff attitudes are important. Patients may find it more difficult to adapt when clinicians devote their energies to the technical aspects of care at the expense of personal interaction [7]. Social workers may be of great help.

Depression is the most prevalent psychological problem among haemodialysis patients and has been identified as a predictor of poor outcome [20]. The DOPPS study confirmed this and showed that depression in dialysis patients is usually under-recognized [21]. Clinical depression has detrimental effects on quality of life, nutrition [22], mortality and hospitalization [21] of haemodialysis patients, but depressed patients in units in which depression is frequently diagnosed had a higher quality of life and lower mortality than depressed patients in units which seldom recognised it [21]. So diagnosis and treatment of depression in chronic dialysis patients should be pursued vigorously. Nephrologists and nurses should watch for signs of depression and, where possible, patients should be offered access to psychiatrists or psychologists.

Right 11: adequate haemodialysis dose

There is a good correlation between haemodialysis dose and patient mortality and morbidity [23]. The dose of haemodialysis is usually measured in terms of Kt/V for urea, i.e. the clearance of urea during a haemodialysis treatment (Kt) as a function of its distribution volume (V). Recently the DOPPS study has demonstrated that mortality and morbidity decrease with increasing values of Kt/V and suggests a target double-pool Kt/V of 1.3 or above [24–26]. The HEMO study showed no morbidity benefit of an equilibrated (double-pool) Kt/V of 1.71 ± 0.11 (SD) as compared to 1.16 ± 0.08 [27]. According to DOQI guidelines, the haemodialysis dose for children should be at least that recommended for adults [11].

Haemodialysis adequacy and delivered haemodialysis dose should therefore be assessed regularly, at least once a month, both in adults and in children, and should provide a stable single-pool Kt/V > 1.2 in >90% of patients. More frequent measurements are necessary when the prescribed haemodialysis dose is not regularly delivered [11].

Right 12: length of dialysis

Mortality of dialysis patients has been shown to increase in parallel with decrease in treatment time and dose [28]. Shortening of treatment time calls for targets that protect patients from undertreatment. When the treatment dose and time have been increased, mortality has fallen [23]. Treatment time is important for satisfactory extracellular volume and blood pressure control, the most time-dependent factors controlling cardiovascular disease [29]. Removal of both small molecules, such as urea and phosphate, and of larger solutes is also important and is also time dependent; therefore adequate treatment time is particularly important [13].

Haemodialysis should be provided at least thrice weekly for >90% of patients. Treatment time should usually be 3–4 h, three times per week (9–12 h/week). DOQI guidelines strongly support thrice-weekly haemodialysis, as compared to twice-weekly, since the latter is usually inadequate [11]. In general, the staff should never decide to shorten the time of dialysis if it is considered to be unhealthy for the patient. For instance, we believe that late arrival of the patient at the dialysis unit is not a sufficient reason for curtailing dialysis time, even for that one session, unless by doing so other patients are deprived of adequate dialysis.

Haemodialysis treatments more frequently and/or for longer times may become necessary under such special circumstances as: (i) excessive interdialytic weight gain; (ii) intolerance of even modest weight gain because of cardiac problems (e.g. dilated myocardiopathy); (iii) fourth-hour dialysis poorly tolerated; (iv) tendency to risky hyperkalemia [30].

Longer dialysis schedules probably reduce mortality and morbidity, as shown by the Tassin experience and supported by the experiences of others [31]. However, it greatly reduces dialysis stations available for patient treatment.

Daily haemodialysis, often in the home, is gaining popularity. A recent review [32] supports the claims that it improves dialysis adequacy, nutrition, blood pressure control and quality of life and reduces hospitalization. However, the evidence base lacks adequate controlled trials, and the procedure is currently available largely to those who can master home haemodialysis.

Right 13: type of membrane, membrane surface area and blood flow rate

The usefulness of ‘biocompatible’ membranes for improving morbidity and mortality of haemodialysis patients is still controversial: some studies suggest that semi-synthetic and synthetic membranes and/or high-flux may reduce morbidity and mortality in dialysis patients [33], while others do not find any difference in mortality and morbidity [34]. Highly permeable synthetic membranes provoke less inflammatory response on contact with blood than conventional cellulose membranes [35], and their large pores allow better convective transport of potentially toxic, medium-sized and large molecules [13]. Since the matter has not been completely clarified [36] and the evidence for lower mortality in patients treated with ‘biocompatible’
membranes is inconclusive [37], the use of such membranes is not compulsory and will continue to be influenced by price and ability to reuse dialyzers.

However data, largely observational, suggest that bioincompatibility may be associated with infection (secondary to immunodeficiency) [38], inflammation and long-term atherosclerosis [39,40]. Thus, when affordable, we would prefer more biocompatible membranes.

When low flux Cuprophan was the only available membrane, the best way to increase removal of larger molecules was to increase the surface area. The introduction of more permeable membranes decreased the importance of the membrane surface area, although some nephrologists still use large surface area membranes for most patients [37]. Both large surface area and permeable membranes increase the importance of high blood flow in removing small and, to a lesser extent, ‘middle’ molecules. A blood flow in the range 300 ± 50 SD ml/min is a reasonable and usually achievable target. It is not established that high flux dialyzer membranes confer a survival advantage [27].

Right 14: appropriate dialysis fluid free from impurities

Water for dialysate should be treated to remove solutes and ensure purity. Each haemodialysis unit should have its own water treatment equipment, incorporating whatever combination of filtration, softening, reverse osmosis and deionization is necessary to ensure that recommended water standards are achieved through all weather conditions and all changes in source of water. The prevention of contamination of dialysate by bacteria and pyrogens (endotoxin or endotoxin fragments) requires modern water treatment equipment, high quality concentrates and machines equipped with filters for filtration of dialysis fluids. Periodic disinfection and sterilization of the water circuit is mandatory to assure a high level of purity of dialysate [41].

Bicarbonate concentration in the dialysate should range between 30 and 35 mEq/l. To prevent bacterial contamination and calcium carbonate precipitation, bicarbonate should be added to dialysate during dialysis treatment.

Right 15: blood pressure control

It is crucial to prevent volume overload of the patient; dry weight should therefore be assessed frequently (at least monthly). This is particularly important in non-compliant patients who prefer drinking to eating nutritious diets so that solid weight is replaced by water: this situation can be identified only by checking the dry weight. Correcting volume overload helps control blood pressure. However, anti-hypertensive drugs are usually necessary in volume expanded dialysis patients, and the dose for each drug must be adjusted to take account of loss during dialysis.

Right 16: adequate nutrition

Maintenance haemodialysis patients are at high risk for protein-energy malnutrition [42,43] because of anorexia, superimposed illnesses and inappropriate dietary restrictions. Malnutrition is associated with a reduced life expectancy [44,45] mainly because of cardiovascular and infectious diseases. Thus malnutrition should be prevented by an adequate diet: normal protein intake (i.e. 1.2 g/kg b.w./day for HD; 1.2–1.3 g/kg b.w./day for PD), adequate calories (30–35 Kcal/kg b.w./day), low potassium, saturated fat and cholesterol content. Vitamin supplements may be necessary. Correction of metabolic acidosis by dialysis may also improve nutrition [46]. Dietitians should be involved in diet prescription, particularly for diabetic patients. Accurate measurement of serum albumin is essential; albumin synthesis is regulated by dietary protein intake but is also suppressed in response to inflammation [47,48].

The use of special food supplements may increase the nutrient intake of some patients, but they are expensive and many patients cannot afford to pay for them. When necessary, they should be given at low cost or free of charge.

Right 17: monitoring and treatment of anaemia

Anaemia requires investigation. The tests should include reticulocyte count and markers of iron stores: serum iron, total iron binding capacity (TIBC), percent transferrin saturation (TSAT), i.e. serum iron × 100 divided by TIBC [49,50]. Most haemodialysis patients require intravenous (IV) iron. If TSAT <20% and/or serum ferritin <100 ng/ml, 100 mg of iron should be given intravenously at each dialysis session for 10 sessions; then, 2 weeks later, iron status, Hct and Hgb should be measured. If no effect has been obtained, another course of IV iron is recommended. The IV iron should be given by slow infusion during the last 2 h of dialysis [50]. When TSAT becomes ≥20% and serum ferritin ≥100 ng/ml, an additional 50–100 mg of iron should be given once a week for 10 weeks [49]. If anaemia persists despite adequate availability of iron, erythropoietin (EPO) treatment becomes necessary [51]. The dose in adult haemodialyzed patients should be ~80–120 Units/kg b.w./week (~6000–8000 Units/week; for children under 5, 300 Units/kg b.w./week) in two to three divided doses [49,50]. Larger EPO doses are often required (if using darbepoeitin, 1 mg of darbepoeitin corresponds to 200 Units of EPO) [52]. Cases of pure red-cell aplasia and antienythropoietin antibodies have been recently reported to occur rarely in European patients who received Epoetin alpha [53,54]. It seems that this complication occurs particularly following sub-continuous administration. Thus, some European countries require that epoetin alpha can only be used IV. During the initial days of treatment with EPO, Hct and Hgb should be monitored every 1–2 weeks; once the target has been reached, Hct and Hgb should be monitored every 4–6 weeks [49,50]. Blood pressure
Supplements of folate and vitamin B₁₂ are also necessary until the target Hb has been reached [50]. Should be monitored closely during initiation of EPO therapy [50].

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**Right 18: prevention of renal osteodystrophy**

Phosphate retention is important in the genesis of secondary hyperparathyroidism and development of renal osteodystrophy. If the serum Ca × P product exceeds 55, it may cause metastatic calcification in arteries, joints and soft tissues [55,56]. Haemodialysis thrice weekly is not alone sufficient to maintain serum phosphate at values of 5 mg/dl (1.6 mmol/l) or lower [57]. A low phosphate diet may also be a low-protein diet that may precipitate malnutrition. Thus patients should be advised to avoid foods rich in phosphate, such as dairy products and some vegetables, and prefer eggs, fish and meat. Despite these precautions, phosphate binders are usually necessary in dialysis patients. If serum phosphate is very high it may be necessary to start treatment with aluminum hydroxide. Aluminum hydroxide and carbonate are excellent phosphate binders; however, they are seldom used chronically because they may cause anaemia, bone disease and dementia. When they are used, the patient should be warned not to take them with fruit, other sources of citrate [58–62] or calcium carbonate [63], since they may all enhance aluminum absorption and cause hyperaluminemia in patients with impaired renal function. They should be used only for short periods and then switched to such binders as sevelamer HCl [64–66] to maintain serum phosphate ≤ 5 mg/dl (≤ 1.6 mmol/l). Sevelamer HCl is a new non-absorbable phosphate binder that does not contain calcium or aluminum [55,64], but its use is limited by high cost. When justified it should be given at low cost or free of charge to the patients. Alternatively calcium carbonate or acetate may be used and taken during meals. Calcium carbonate, particularly when given with meals, binds dietary phosphate in the intestinal lumen by forming insoluble calcium phosphate, which is not absorbed. It has two drawbacks: it may cause (i) constipation, reducing compliance, and (ii) hypercalcaemia (since some calcium is absorbed even when calcium carbonate is taken with meals), which is a risk factor for metastatic calcification, particularly in arteries [67,68]. Calcium acetate, widely used in the USA [69], and calcium citrate have similar effects. Lanthanum carbonate also appears to be an effective phosphate binder [70–72]. Serum calcium should be maintained at 9.5–10 mg/dl (2.38–2.5 mmol/l). This is best obtained with calcitriol (given either per os or intravenously just after the dialysis session) to suppress serum PTH concentrations. The intermittent oral or IV pulse calcitriol, three times weekly at the end of dialysis, is sometimes necessary when PTH values are > 400; high peak calcitriol levels are better able to suppress PTH [73–76]. Serum calcium and phosphate should be checked monthly. Recently vitamin D analogues have been used to treat hyperparathyroidism with less risk of hypercalcemia and to prevent metastatic calcifications [68,77–79]. In dialysis patients the level of serum PTH should be maintained around the 3-fold upper limit of normal value (i.e. ~200 pg/ml). Suppression of PTH release is associated with normalization of serum alkaline phosphatase.

Supplements of calcium are frequently necessary and can be given as calcium carbonate or acetate between meals. In severe cases of refractory hyperparathyroidism, parathyroidectomy may be necessary.

**Treatment of ESRF by peritoneal dialysis**

**Right 19: training and support**

It has been argued that peritoneal dialysis should be commenced when renal function declines to below a weekly renal Kt/V urea of 2.0 [80]; this condition occurs at a creatinine clearance of ~10 ml/min in a patient with a total body water of 35 l [80]. This is based on the assumption that renal and peritoneal clearances are equivalent.

A PD unit requires distinct training areas and areas for examination/treatment and for education of the patient. Approximately 30 m² storage space is required for an average PD unit. A unit adjacent to a haemodialysis unit or nephrology ward is a popular configuration because of the nursing cross cover that is possible for patients who are staying in hospital whilst undergoing training. Disconnect systems for peritoneal dialysis should be provided to all peritoneal dialysis patients [7].

Peritoneal dialysis is considered adequate in most patients if the weekly Kt/V for urea is at least 2.0 and the weekly creatinine clearance is at least 60 l/week per 1.73 m² body surface area [80]. CAPD is usually performed with a typical minimum dialysis prescription of four 2 l dwells per day, including one overnight exchange [80]. Increase in peritoneal small-solute clearance has no beneficial effect on patient survival [81]. Sometimes, however, it is necessary to increase the number of exchanges or the dwell volume, when the residual renal function is completely lost or there is a decrease in the net permeability of the peritoneal membrane. Because of its efficiency and convenience, APD is becoming the most popular PD modality. The use of icodextrin may be helpful in increasing (convective) peritoneal clearance and sodium removal in automated peritoneal dialysis patients [82]. Biocompatible PD fluids are promising, but their efficacy in preventing long-term PD failure is unproven [83].

**Renal transplantation**

**Right 20: the right to opt for transplantation**

In countries that have facilities for transplantation, patients suitable for transplantation have a right to: (i) be fully informed about the possibility of renal or pancreas/renal transplantation from cadaver donors,
and of live donor transplant, and the procedures involved before being placed on the waiting list; (ii) be included without discrimination on one or more waiting lists for renal or pancreas/renal transplantation from cadaver donors, with the dialysis units performing all the procedures necessary to satisfy the requirements of the transplantation center(s), including the need to provide regular serum samples for circulating antibodies tests; (iii) know that the wait for a transplant will be determined by a fair system taking account of histocompatibility, patient's health and time in the queue.

Discussion

Chronic kidney disease and kidney failure are, in their own right, serious health problems in any society. The fact that these disorders are highly prevalent and substantially increase the risk of hypertension and death from cardiovascular disease has made chronic kidney disease an important public health problem. Notwithstanding the importance of this problem, in many countries the plight of individuals with kidney disease or kidney failure is largely unrecognized or ignored. For this reason the IFKF has undertaken the challenge of developing kidney foundations where none exist and of growing, strengthening and enhancing the effectiveness of existing kidney foundations. The goal is to establish effective organizations that will speak and work for the rights and needs of kidney patients.

To this effect, the IFKF has established, as one of its standing committees, the Patient Advocacy Committee. One of the purposes of this committee is to develop position papers that may stimulate thinking and discussion concerning public policy and government-related healthcare issues that are of concern to individuals with kidney disease and also to provide a template and conceptual construct that can be used by local kidney foundations or other organizations to advocate for the needs and rights of these kidney patients.

As an initial step, the IFKF Patient Advocacy Committee has undertaken to develop a document that sets forth the rights of individuals with advanced chronic renal failure undergoing maintenance dialysis therapy. Such individuals often can be kept alive and relatively well with modern dialysis therapy. However, since the treatments are quite expensive, it is important to ensure that there is an equitable distribution of resources for this care. The composition of this Committee consisted of nephrologists and one non-healthcare worker, and included an individual undergoing maintenance haemodialysis therapy.

Some of the rights set forth in this document address technical issues related to the dialysis treatment. Other rights address more global ethical issues such as the right to have access to chronic dialysis therapy, to privacy, and to treatment with dignity.

It is recognized that economic disparities and competing public health problems in different countries have made it far more difficult to formulate a series of rights that could be applicable to all individuals with chronic kidney failure, regardless of where they may live or what may be their economic, social, ethnic or political status. The Committee has attempted to be sensitive to this issue and to develop a document that can be applied practically in virtually all modern societies. However, members of the Committee also tried not to be seduced by the argument that some countries may be too impoverished to provide some minimum of chronic dialysis services to their citizens when it is needed. To acquiesce to such arguments is to agree, a priori, that the expenditure of resources by such governments on military matters or other costly programs necessarily supersedes in importance the maintenance of the health of their citizens with renal disease or renal failure. The Committee viewed such arguments as beyond its purview.

The rights proposed in this document were approved by the Board of Directors of the IFKF. It is viewed as a work in progress. New scientific evidence, technological advances, cultural developments and continued ethical deliberations will undoubtedly lead to many future and desirable modifications of the rights set forth in this document.

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