

Kidney failure & transplantation



Chronic kidney disease (CKD) is a progressive disorder indicated by the gradual loss of kidney function over time.¹



As CKD worsens it can progress to kidney failure, also referred to as end-stage renal disease (ESRD) which is the final and most critical stage of CKD where the kidneys can no longer function without support.²



This is identified when a patient's kidney function is less than 15%.³



ESRD poses a significant global health burden, affecting almost 2.5 million patients worldwide.⁴

RENAL REPLACEMENT THERAPY

Those who progress to ESRD will require renal replacement therapy (RRT) which involves either dialysis or kidney transplantation. The number of kidney patients requiring RRT is growing and in Europe there are approximately 63,000 new patients each year.⁵

TRANSPLANTATION OR DIALYSIS

Kidney transplantation is the preferred treatment for appropriate patients with ESRD because of improved patient survival and quality-of-life benefits over dialysis, as well as healthcare cost savings.^{4,6}



Transplanted patients have a 77% survival rate after 8 years compared to 44% of dialysis patients in the same time frame.⁷



Dialysis patients commonly undertake ~4-hour clinical visits, 3 times a week for the rest of their lives or until transplantation.⁸



Compared with maintenance dialysis therapy, transplantation in general has been found to be highly cost-effective.⁹



Compared with the general population, patients undergoing maintenance dialysis may have a significantly increased incidence of cardiovascular disease including left ventricular hypertrophy (LVH), accelerated valvular damage, atherosclerosis and coronary heart disease.¹⁰



Renal Registry data from the UK shows that for those 65s or over who remain on dialysis, the 5-year survival is poor, at around 30% - which is worse than major cancers.^{11,12}

CHALLENGES IN ORGAN TRANSPLANTATION



Availability:

The gap between the supply and demand for organs is increasing, given the rise of an ageing population and the increase in the prevalence of diseases relating to organ failure, such as diabetes.¹³

There are approximately 80,000 kidney patients on transplant waiting lists across the European Union.¹⁴



Suitability:

Organ suitability is established according to blood type and by assessing levels of preformed antibodies to donor-specific Human Leukocyte Antigens (HLAs).¹⁵

ORGAN ALLOCATION SYSTEMS

Kidney transplant patients will either receive a donor organ from a living or a deceased donor.

Living donors usually donate to a specified patient and patients waiting for a deceased donor organ will be on a waiting list operated by an organ allocation scheme, which may vary by country.

Allocation schemes are generally governed by appointed transplant organizations that may operate at a regional, national, or even international level.

Matching donor organs and recipients is a complex challenge and there is no universal consensus on the factors that should be considered in the allocation process, leading to considerable variation in the way patients are prioritized on waiting lists within different schemes.¹⁶

Allocation policies and strategies have been put in place across many schemes to improve equity in access to transplants, yet despite this, legal and national guideline challenges mean that opportunities for transplants for sensitized kidney patients remain limited.¹⁷

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