Listing for renal transplantation in relation to renal function:

A proposal for consensus within the North West Renal Transplant Work Stream

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Background

The North West Renal Transplant Workstream group met on 7th September, 2011, for its routine meeting. It was felt that throughout the North West of England patients were considered for transplantation, listed, and activated at different and somewhat variable points in time in relation to their glomerular filtration rate (GFR). It was therefore suggested that a sub-group should propose criteria for commencing workup for transplantation, listing, and finally activation on the waiting list in relation to eGFR. Following such criteria closely would reduce the serendipity that is currently seen in a high percentage of transplant listings.

Evidence and recommendations elsewhere

A US consensus conference in 1998 suggested that a potential renal transplant candidate should have progressive renal disease with a GFR < 18 ml/min\(^1\).

The current European Best Practice Guidelines on Evaluation, selection and preparation of the potential transplant recipient (2002) do not provide a detailed recommendation on this topic. However they do specify that in general live donation should only be undertaken when there is clear evidence of progressive, irreversible renal failure and a creatinine clearance < 15 ml/min/m\(^2\) or less than 20 ml/min/m\(^2\) in diabetic patients\(^2\).

The Canadian Transplant Guidelines\(^3\) in 2005 state that referral for consideration of transplantation should occur when renal replacement therapy is expected to commence within 12 months, but do not specify a level of GFR.
However these guidelines stipulate a GFR < 20 ml/min for pre-emptive live donor transplantation.

Bunnapradist and Danovitch, in a 2007 review article on evaluation of adult kidney transplant candidates\textsuperscript{4}, suggested that patients should be referred for consideration when they approach CKD stage IV and a GFR of less than 30 ml/min/1.73 m\textsuperscript{2}.

Ramos and Brennan, in the respective UpToDate™ review article\textsuperscript{5} on this topic emphasise that there is remarkably little reliable information concerning the ability to predict progression of CKD\textsuperscript{5}. Very recently, sophisticated models to predict the progression of CKD have been described\textsuperscript{6} but these are clearly impractical in a clinical scenario. Ramos and Brennan seem to broadly concur with the recommendation to list when GFR < 18 ml/min as suggested by ASTS previously\textsuperscript{1} and <20 ml/min as proposed by the 2005 Canadian Transplant guidelines\textsuperscript{3}. They also emphasise that different levels of GFR may be used if combination of renal and non-renal solid organ transplantation is considered.

The UK Renal Association Guidelines published in early 2011 suggest that patients with progressive deterioration in renal function suitable for transplantation should be placed on the national transplant list within six months of their anticipated dialysis start date\textsuperscript{7}. It also states that it is important to review all patients with stage 4 and 5 CKD as potential transplant recipients\textsuperscript{7}. 
Recommendation

There is remarkable little evidence on when to list patients for renal transplantation and models for progression of CKD are imperfect. Published recommendations are variable.

We recommend that

1. transplantation should be considered as part of patient education and modality choice in all patients with CKD stage IV who lack a clear contra-indication for transplantation and who have evidence of irreversible renal failure and progression. Within CKD stage IV we suggest that clinicians make individual decisions based on patient characteristics, such as the underlying kidney disease and the rate of progression.

2. patients who at this stage appear suitable and willing to go ahead should be formally assessed for transplant, in accordance with local practice and protocols (i.e. either start work-up with their main renal consultant or be referred to a dedicated work-up clinic in-house).

3. patients who have gone through this evaluation and workup and who are deemed suitable by nephrologists and transplant surgeons should be put on the waiting list in the suspended category without delay.

4. activation should be undertaken in all patients who are already established and stable on dialysis and in whom no new intercurrent illness has occurred since the decision to list.
5. activation should be undertaken in all patients who are pre-dialysis, have a GFR below or of 15 ml/min and in whom no new intercurrent illness has occurred since the decision to list. In those pre-dialysis patients with a GFR above 15 ml/min we suggest that activation is considered when patients are within 6 months pre dialysis. However these predictions are notoriously imprecise and we would suggest that clinicians make individual decisions and also involve patients in the decision making process, stressing the benefit of pre-emptive transplantation.

6. living kidney donation should be discussed as the gold standard renal replacement therapy and should be broached early in the transplant assessment process and considered at the initial visit for transplant evaluation. Assessment should be started/considered with e-GFR 20mls/min if living donation is being considered (BTS Guidelines – 2011)

7. earlier workup should be considered in diabetics and other patients with a more rapid progression of renal impairment. Eligible candidates should be activated on the combined pancreas and kidney transplant list when the eGFR is 20 ml/min or below.

8. For the purpose of activation and listing GFR should be estimated via eGFR as per MDRD formula. However, in patients with at the extremes
of muscle mass and nutrition consideration should be given to formal 24 hour collection and creatinine clearance. Alternatively, the GFR can be estimated with the Cockcroft-Gault formula. Isotope GFR may be considered in exceptional circumstances, i.e. when there is still uncertainty regarding the recipient’s true GFR.
References


