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INVITED COMMENTARY

Marginal organs: how far should we go?

Uwe Heemann

Department of Nephrology, Klinikum rechts der Isar der, Technischen Universität München, Ismaninger Str. 22, 81675 München, Germany

Correspondence
Prof. Dr Uwe Heemann, Department of Nephrology, Klinikum rechts der Isar der, Technischen Universität München, Ismaninger Str. 22, 81675 München, Germany. E-mail: uwe.heemann@lrz.tum.de

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In a time of severe organ shortage any option to increase the number of available organs has to be considered. In the article of Brook *et al.* in this issue of Transplant International, kidneys with a history of tumours are suggested as such a possible source. This suggestion is very tempting as there is an increasing number of such organs. That is, if the surgical procedure of nephrectomy for a localized renal cancer prevails for some time. At the moment there is a remarkable switch towards kidney mass preserving procedures. In our center almost all kidneys remain in the patient and only the region of the tumour is dissected. However, in the majority of other centers in such cases a nephrectomy is performed. If we can get hold of these organs a living donation can be performed. The consequences are immediate graft function and long graft survival.

What are the disadvantages? First of all there still remains the possibility of late cancer reappearance or metastasis. In partially nephrectomized kidneys due to renal cell carcinoma (RCC) this percentage ranges between 1–4% within 5 years. This is rather low as the majority of our patients, particularly in the group of patients over the age of 60 years have died from cardiovascular disease by this time. At the moment the waiting time in this patient group is about 3–4 years in the Eurotransplant region. Thus, a large proportion of these patients does not receive a graft at all due to death or deterioration of the state of health. Furthermore, at the moment in order to enable these patients to be transplanted at all, marginal organs are accepted in this group. These organs have a higher percentage of delayed graft function and a lower rate of graft function one year after transplantation. Last but not the least if the organs never function the status of health in the recipients is even worse than before the transplantation. So patients in a rather poor state of health should not receive a marginal organ. On the other hand these are the patients who profit the most from a functioning organ.

Due to limited possibilities of immunosuppression in former times we are more or less focussed on rejection rates and graft survival. And if we consider patient survival we collect the data only as long as the graft function prevails. I think it is time to change our perspective. Patient survival should be our aim. We should not only think about the time of graft function but take into account the time after the graft has failed as well. With these data we would be able to calculate the real benefit of a given procedure such as transplantation. Only then can we really be sure which patient gains something from transplantation.

At the moment we know the survival of patients on the waiting list and that of transplanted patients. Thus, we can safely assume that it is better to transplant a graft at risk for cancer reappearance with otherwise excellent kidney function than one with a rather poor function. So we should get hold of organs with small renal cells carcinomas and transplant them. In my view the ideal recipients would be elderly patients with poor heart function as

these patients have most problems with delayed graft function, volume overload and/or never functioning grafts.

Should we stop at this point? Definitely not. We should rethink our policy regarding waiting time of recipients after cancer as a low risk of cancer reappearance is better than certain death from cardiovascular failure. Furthermore, the longer patients have to wait on dialysis the more cardiovascular problems they develop, thus, the more likely it is that the graft fails and the gain in life time is reduced. We should also change our definition of marginal organs. Age *per se* does not define a marginal organ. The point here is kidney function as defined by proteinuria, creatinin and time of ischemia. In organs with no marginal status such as kidneys with RCC we should calculate the risk and the possible benefit. And there are other groups such as organs from donors with Hepatitis B and C or even HIV or even organs with a history of cancer. There are certainly groups of patients who rather die as a consequence of chronic renal failure than from diseases or cancers transmitted by the transplanted organ. This is in line with the current discussion of MELD as MELD is a measure for survival on the waiting list but not for overall survival.

The next step would be to assess the potential risk of disease or cancer transmission and the 5-year survival even if disease or cancer are transmitted and compare it to the chance of survival if the patient is not transplanted.

In this respect the article of Brook *et al*. gives a new perspective of how we should proceed in the very near future.

