Marginal donors with diabetic nephropathy: worse outcomes?

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Introduction and Aims

Since the beginning of transplantation medicine, many efforts have been made to overcome the shortage of transplantable organs.

Marginal donors (diabetic, hypertensive and/or older patients) have long been used in renal transplantation, with varying success.

The **aim** of this study was to:

- Evaluate renal function, and patient and graft survival, in renal transplant recipients who received a graft from diabetic cadaveric donors with histological lesions of diabetes.

Methods

Retrospective observational case control study, from 2002 to 2014

Grafts were submitted to renal biopsy before implantation, at baseline:

- **Group A (cases)**: diabetic donors with diabetic nephropathy on the graft biopsy
- **Group B (controls)**: consecutive receptors of non-diabetic donors

Outcome variables:

- Serum creatinine
- Patient and graft survival (as a composite end-point)

Statistical analysis was performed using STATA package.

Results

63 renal transplanted patients

- **6 (9.5%)** cadaveric donor graft with lesions of diabetic nephropathy
- **57 (90.5%)** cadaveric non-diabetic donor

Receptors:

- 51.9±11.6 years, 34 (54%) males
- 22 (41.5%) caucasian race
- Median dialysis vintage of 62.7 (29.4 – 104.9) months Median PRA sensibility 0 (0 – 2)%
- Ten receptors were diabetic before transplant, and none of these received a diabetic graft

Donors:

- Mean donor's age was 47.2±15 years, 34 (53.9%) females

All patients were submitted to induction therapy, 18 (28.6%) with thymoglobulin.
Median mismatch HLA of 4 (3 – 5), and median cold ischemia time of 15.5 (13 – 18) hours.

Median follow-up of 64.5 (52.7 – 88) months.

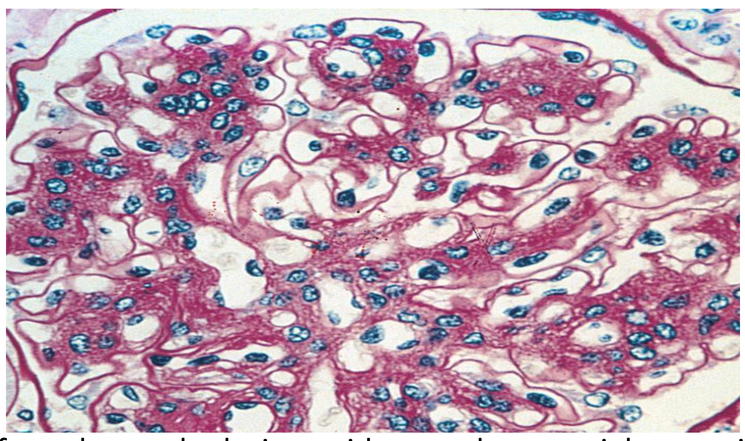
- 11 (17.5%) patients had a rejection (2 cellular, 7 humoral, 2 patients had both).
- 21 patients developed NODAT, 16 hypertension and 42 had dyslipidaemia.
- **11 grafts were lost**: 9 deaths and 2 graft failure.
- Mean serum creatinine at the end of follow-up was 1.5±0.5, and median 24h proteinuria of 100mg.

Comparing the 2 groups according to presence / absence of diabetic nephropathy at a baseline biopsy, we found no differences concerning the characteristics of the population, namely donor's and receptor's age, dialysis vintage, PRA, mismatches, cold ischaemia time, induction and maintenance therapy, follow-up time, and medical acquired comorbidities, except for hypertension post transplant, that was more prevalent among group A (p=0.001).

There were no differences concerning patient or graft survival, although patients in the lesion group ended with Scr higher (1.5 vs. 2.1 mg/dl, p=0.01) and high levels of proteinuria (0.4 vs, 1.7 g, p=0.03).

During follow-up, three patients (50%) in the diabetic lesion group suffered a rejection (all three had a early humoral rejection), while only 8 (14%) of group B had a rejection (p=0.03).

Performing a Cox regression analysis, adjusted for HCV, rejection episodes, and hypertension, **having diabetic lesions was associated with worse renal function** - HR of 6.9 (95% CI 1.2 – 40, p=0.03) of having a Scr > 1.5 mg/dl in diabetic lesion donors. It did not however, associate with our composite end-point of patient and graft survival (only hypertensive showed a HR of 0.1 (0.04 – 0.5, p=0.001)).



Diffuse glomerular lesion: widespread mesangial expansion

Conclusions

While patients receiving a graft with diabetic nephropathy had more frequent rejections, higher serum creatinine and proteinuria at end of follow-up, this did **not reflect in worse patient or graft survival**.

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