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#399 Prevent or treat? Influence of the management of urinary tract infections on the renal graft

Complejo Asistencial Universitario de Salamanca

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Abstract

Urinary tract infections are one of the most frequent pathologies in kidney transplant patients. Their development and their treatment can compromise the function of the graft.

AIMS

1.-Determine variables related to the prevention of deterioration of graft function or what factors lead to said deterioration, in kidney transplantation in general.

2.-Identify what is related to worse graft function in patients receiving kidneys from a living donor.

3.-Find out the factors that are related to impaired renal function in cadaveric donors in the period before and after the implementation of a living kidney donor program.

4.-Establish the changes in the findings of the follow-up of the cadaver graft, the tendency to the type of pre-transplant dialysis used or the results of the cadaver graft rejection after implantation of the living donor program regarding the findings prior to the implementation of said program.

Methods and Materials

Retrospective observational multicenter study with a sample of 1,300 transplant patients:

Group TV: living-donor kidney transplant patients (n=150), Group TCpre11: deceased-donor kidney transplant patients in the period prior to the implementation of the living-donor program. (n=650) and Group TCpost11: donor kidney transplant patient's cadaver in the period prior to the implementation of the living donor program (n=500).

Variables: Age, BMI, urine culture, pre-transplant urinary tract infections, treatment of pre-transplant urinary tract infections, functional outcome.

The analysis was performed using the automatic statistical software IBM SPSS Statistics for Windows, Version 25.0.

Statistical significance was accepted for p<0.05.

Table 1. Patient's baseline characteristics

		TV n=150	TCpre-2011, n= 650	TC post 2011, n= 500	Total	p-value
Age	Mean	46.62	57.30	56.91	55.75	0.0004
	SD	14.69	16.24	13.75	15.384	
BMI	Mean	24.92	27.03	26.81	26.69	0.0002
	SD	3.59	4.97	4.75	4.74	
Urine culture positive	Mean	1.00	3.67	3.01	3.04	0.0047
	SD	0.69	3.33	3.25	3.16	

Table 2. Multivariate analysis in the general sample

Variables	Unstandardized Coefficients B	p-value	95,0% C.I Lower Bound	95,0% C.I Upper Bound
Age	0.013	0.0002	0.009	0.018
BMI	0.046	0.0002	0.032	0.060
Urine culture	0.050	0.0001	0.028	0.072
Antibiotic profilaxis	1.189	0.0002	0.950	1.428
Antibiotic demand	0.890	0.0001	0.685	1.095
Manosar	-0.673	0.0002	-1.030	-0.315
Prednisone	-0.570	0.0001	-0.732	-0.409
DM2	-0.256	0.002	-0.420	-0.092
Former smoker	-0.235	0.020	-0.434	-0.037

Results

The mean of positive urine cultures was 3.04.

The mean pre-transplant UTI was 17.7% (231), for TV 12% (n=18), TCpre11 25.69%(n=167), TCpost11 9.2(n=46).

Multivariate analysis: correlation between treatment with manosar and renal function (-0.673), the lower the treatment with manosar, the greater the presence of alterations in renal function (p= 0.001)*.

Correlation between positive urine culture and renal function (0.050), the greater the positive urine culture, the greater the presence of alterations in renal function (p=0.0001)*. Correlation between the use of antibiotic prophylaxis for the treatment of pre-transplant urinary tract infections and renal function (1,189), the greater the use of antibiotic prophylaxis, the greater the presence of alterations in renal function (p=0.0002)*.

Correlation between the use of antibiotics on demand for the treatment of urinary tract infections pre-transplant and renal function (0.890), the greater the use of antibiotics on demand, the greater the presence of alterations in renal function (p=0.0001).**

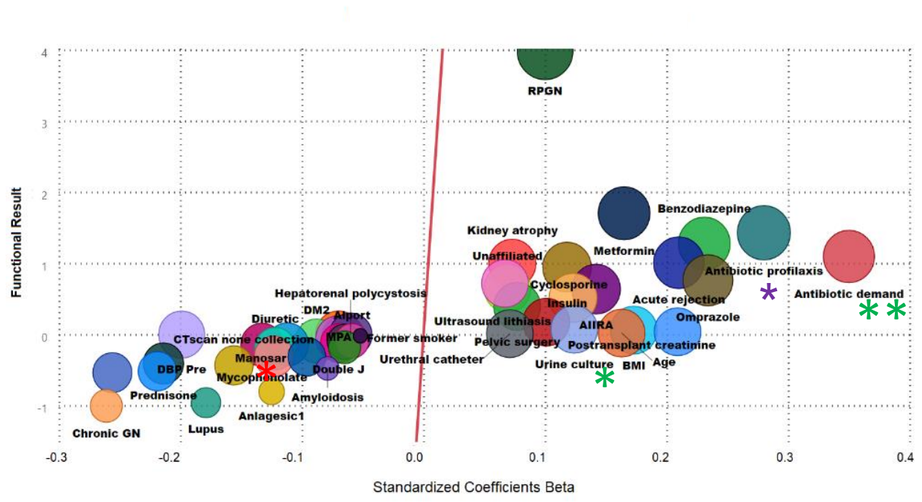

Chart 1. Multiple regression statistical analysis between renal function and the studied variables.

Discussion

Derived from this data, we could deduce that the profile of the patient candidate for renal transplantation, according to our series, was more fit in the era prior to the incorporation of live transplant program, currently presenting a profile of patients with greater weight, which is associated with more comorbidities of their own and those derived from being overweight (more acute rejection, more delayed graft function, more lack of function of the graft, plus diabetes and derived from the proinflammatory state itself that induces obesity and its consequences, among which are hypertension arterial, cardiac pathology (1)

Urinary tract infection is the most common infectious complication, the use of antibiotic therapy, the sublingual vaccine and biopharmaceuticals such as oral mannose was greater in TCpre11 than in VT. The application of pharmacological measures to resolve UTIs in CT pre11 they are related to urine culture and urinary tract infection (2)

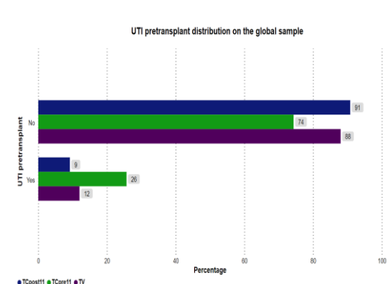

Figure 1. UTI pretransplant.

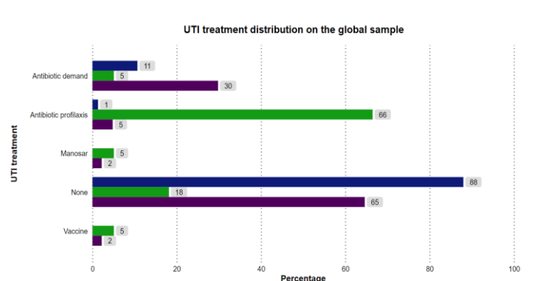

Figure 2. Antibiotic use.

Conclusions

The presence of positive urine cultures, the need to use antibiotic therapy as a prophylactic strategy for recurrent urinary tract infections, or the use of antibiotics on demand are associated with a greater deterioration in graft function. Less use of repeat urinary tract infection prevention protocols is associated with more deterioration of graft function.

References

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