

Immunosuppressive medication adherence's association with microvascular inflammation in protocol biopsies in a kidney transplant Mexican population

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I have no conflict of interest to report.

Non-adherence to immunosuppressive treatment is a major cause of graft failure, and development of de novo donor-specific antibodies.

Among the strategies to evaluate adherence to immunosuppression are adherence tests.

The simplified medication adherence questionnaire (SMAQ) was validated in spanish language for use in kidney transplant patients.

Ortega SF reported non-adherence in 39.01% of patients with at least 1 year post-kidney transplant in the spanish population.

CUESTIONARIO DE ADHERENCIA DEL PACIENTE CON EL TRATAMIENTO (SMAQ)

El presente cuestionario se refiere al grado de cumplimiento que usted hace del tratamiento inmunosupresor que le ha prescrito el médico para su trasplante. Por favor, responda a todas las preguntas indicando la opción que crea conveniente en cada caso. Por favor, recuerde que sus respuestas son confidenciales y conteste de la forma más sincera posible. **MUCHAS GRACIAS.**

1. ¿Toma siempre la medicación a la hora indicada?
 Sí
 No

2. En caso de sentirse mal ¿ha dejado de tomar la medicación alguna vez?
 Sí
 No

3. En alguna ocasión ¿se ha olvidado de tomar la medicación?
 Sí
 No

4. Durante el fin de semana ¿se ha olvidado de alguna toma de la medicación?
 Sí
 No

5. En la ÚLTIMA SEMANA, ¿CUÁNTAS VECES no tomó alguna dosis?
 Ninguna vez
 1 a 2 veces
 3 a 5 veces
 6 a 10 veces
 Más de 10 veces

6. DESDE LA ÚLTIMA VISITA, ¿Cuántos días completos no tomó la medicación?
Días: _____

Method

Observational, analytical, transversal and prospective study.

G5 KDIGO chronic kidney patients who were transplanted at Central Military Hospital, Mexico City.

At 5 years post-transplant, renal biopsy was performed and same time SMAQ was applied.

The Kolmogorov-Smirnov test.

Were performed χ^2 and Mann-Whitney tests were performed.

$p < 0.05$ was statistically significant.

Results

Were included 199 kidney transplant recipients.

Non-compliance prevalence 5 years post-transplant in our mexican population was 37.2%.

Results

Age (year)	38.50 (± 11.9)
Sex	
Female	45.2%
Male	54.8%
Cr (mg/dL)	1.30 (± 0.46)
GFR (ml/min/1.73 m ² SC)	67.42 (± 22.33)
FK level (ng/mL)	6.78 (± 2.2)
Compliance (SMAQ test)	
Yes	62.8% (n=125)
No	37.2% (n=74)
Graft rejection diagnosed by biopsy	
No	64.8% (n=129)
Yes	
Acute active humoral rejection	11.1% (n=22)
Chronic active humoral rejection	24.1% (n=48)
Banff microvascular inflammation	
g (≥ 1)	60.8% (n=121)
ptc (≥ 1)	44.7% (n=89)
g+ptc (≥ 2)	32.7% (n=65)
C4d (≥ 1)	19.1% (n=38)

Subclinical humoral rejection (acute or chronic): 35.2%.

Microvascular inflammation: 32.7%.

	Compliance	No Compliance	<i>p</i>
FK level (ng/mL)	6.89 (± 2.34)	6.61 (± 1.94)	0.531
GFR (ml/min/1.73 m ² SC)	68.79 (± 23.4)	65.11 (± 20.3)	0.235
Rejection Diagnosis			
AAHR	12 (54.54%)	10 (45.46%)	0.622
CAHR	32 (66.66%)	16 (33.33%)	
Banff Items			
g ≥ 1	97 (60.24%)	24 (63.15%)	0.298
ptc ≥ 1	69 (42.85%)	20 (52.63%)	0.092
g+ptc ≥ 2	43 (66.15%)	22 (33.84%)	0.302
c4d ≥ 1	32 (19.87%)	6 (15.78%)	0.375

Table 1. Biochemical and histological evolution after kidney transplant.

Table 2. Biochemical and histological evolution after kidney transplant.

Our results are similar to reported in 2019 by *Al-Sheyab A et al*: 39% were non-compliance -there were no differences in the Banff grade/antibody-mediated rejection between the 2 groups.

Lerut E et al where he concluded that non-adherent patients have greater c4d, tubular damage and peritubular capillaritis.

Conclusion

The non-compliance rate in our transplant population was 37.2%.

We didn't find a statistically significant association between treatment adherence measured by the SMAQ test and microvascular inflammation determined in protocol renal biopsies.

We need to apply the SMAQ test to patients with biopsies by indication to evaluate better test's discrimination.