The pharmacogenetic of cyclosporine in renal transplantation

Poster N°: 83

A. Abderahmene (1), M. Ammar (1), A. Moussa (1), D. Amor (1), W. Sahtout (2), A. Azzabi (2), D. Zellama (2), A. Bouslama (1), A. Omezzine (1)

(1) Biochemistry Department, LR12SP11, Sahloul University Hospital, Street Route Ceinture Sahloul, 4054, Sousse, Tunisia

(2) Nephrology Department, Sahloul University Hospital, Street Route Ceinture Sahloul, 4054**,** Sousse, Tunisia

Introduction – Objectif

- our study is the first study to investigate the effect of SNPs in *CYP3A5*, *CYP3A4*, *ABCB1* and *POR* genes on the efficacy and the safety of cyclosporine (CsA) which is one of the cornerstone immunosuppressive drugs prescribed to kidney transplant recipients to prevent and treat allograft rejection

Methods

- **Population**: Retrospective study conducted between 2009 and 2019.
- 223 Tunisian kidney transplant patients receiving receiving CsA and mycophenolate mofetil (MMF) .
- Both adults and children patients participated in the study
- **Informed consent** accompanied by an information letter was signed after approval by the ethics committee
- **Drug dosage**: Electrochemiluminescence
- **DNA extraction**: the "salting-out" technique
- **Genotyping**: PCR-RFLP (CYP3A5*3, CYP3A4*22, ABCB1 and POR)

Results

- we found a significant (**p= 0.001)** lower C0/D CsA in patients with at least one *CYP3A4*1B* allele (**0.62 ± 0.22)** compared to the wild type (*1/*1). **(0.88 ± 0.36).**
- After adjusting for confounding factors, we found a statistically significant increased risk of acute rejection associated with carrying CYP3A5*1/*1 or *1/*3 compared to the CYP3A5*3/*3 **(p=0.001)** and of carrying CYP3A4*1B/*1B or *1/*1B compared to the CYP3A4*1 /*1 **(p= 0.03).**
- we found a statistically significant decreased risk of chronic rejection associated with CYP3A5*3/*3 CYP3A5*1/*1 and *1/*3 compared with the **(p=0.002)** and of CYP3A4*1B/*1B and *1/*1B compared with the CYP3A4*1 /*1 **(p= 0.006).**
- we found that the occurrence of leucopenia was significantly decreased in patient with at least one *CYP3A4*1B* allele **(p= 0.010)** and the occurrence of diarrhea was significantly increased in patient carrying the variant allele of ABCB13435 **(p= 0.005).**

Conclusion

- our results support the usefulness of CsA pharmacokinetics in pre-kidney transplant assessments