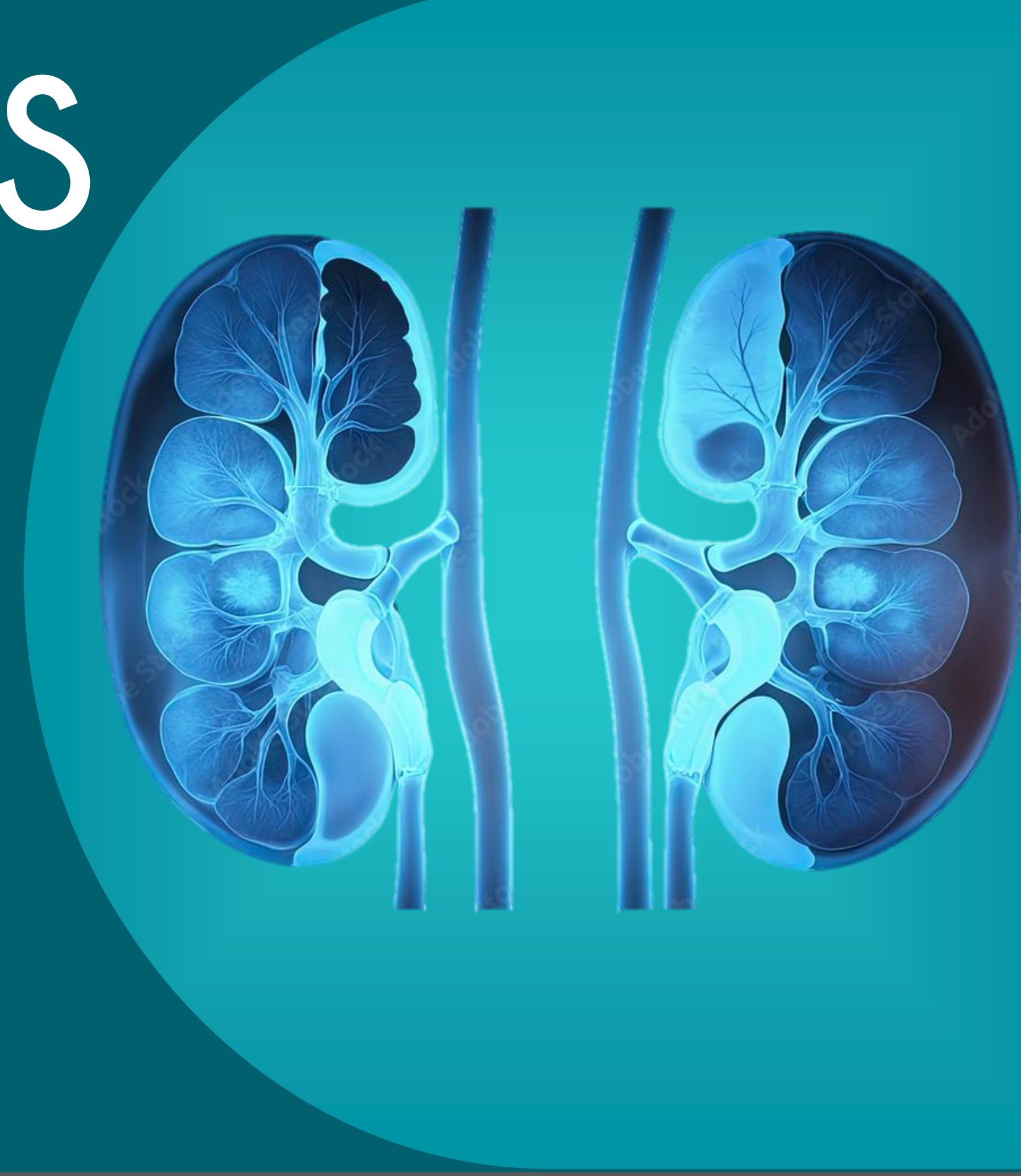


MONITORING OF TACROLIMUS IN A KIDNEY TRANSPLANTED COHORT



C. Carcieri ¹, G. Soragna ², S. Allegra ³, S. Scalpello ¹, A. Bosio ¹, E. Cerutti ¹, G. Fazzina ¹, S. De Francia ³, A. Bo ⁴, C. Vitale ², A. Gasco ¹

1. Mauriziano Hospital, Hospital Pharmacy, Turin, Italy
 2. Mauriziano Hospital, Nephrology and dialysis department, Turin, Italy
 3. University of Turin, Clinical and biological sciences department, Turin, Italy
 4. Mauriziano Hospital, Management control department, Turin, Italy

BACKGROUND AND IMPORTANCE

Tacrolimus (TAC) is the first-choice immunosuppressant for patients undergoing **kidney transplantation**. However, it has considerable **drug interactions** likelihood, **high inter/intra-patient variability** and a **narrow therapeutic index**. Therefore, constant monitoring is request, to avoid organ rejection or adverse events. From this perspective, a **multidisciplinary team** of clinicians, hospital pharmacists and nurses, provides to outpatients: **recognition and reconciliation** of drug therapy, **therapeutic drug monitoring** (TDM) of TAC concentrations in whole blood, **professional counselling** to verify therapeutic adherence and correct drug intake.

AIM AND OBJECTIVES

To examine tacrolimus plasma concentration variability in a cohort of transplanted patients in order to identify significant correlation useful for guiding clinician in optimizing therapy.

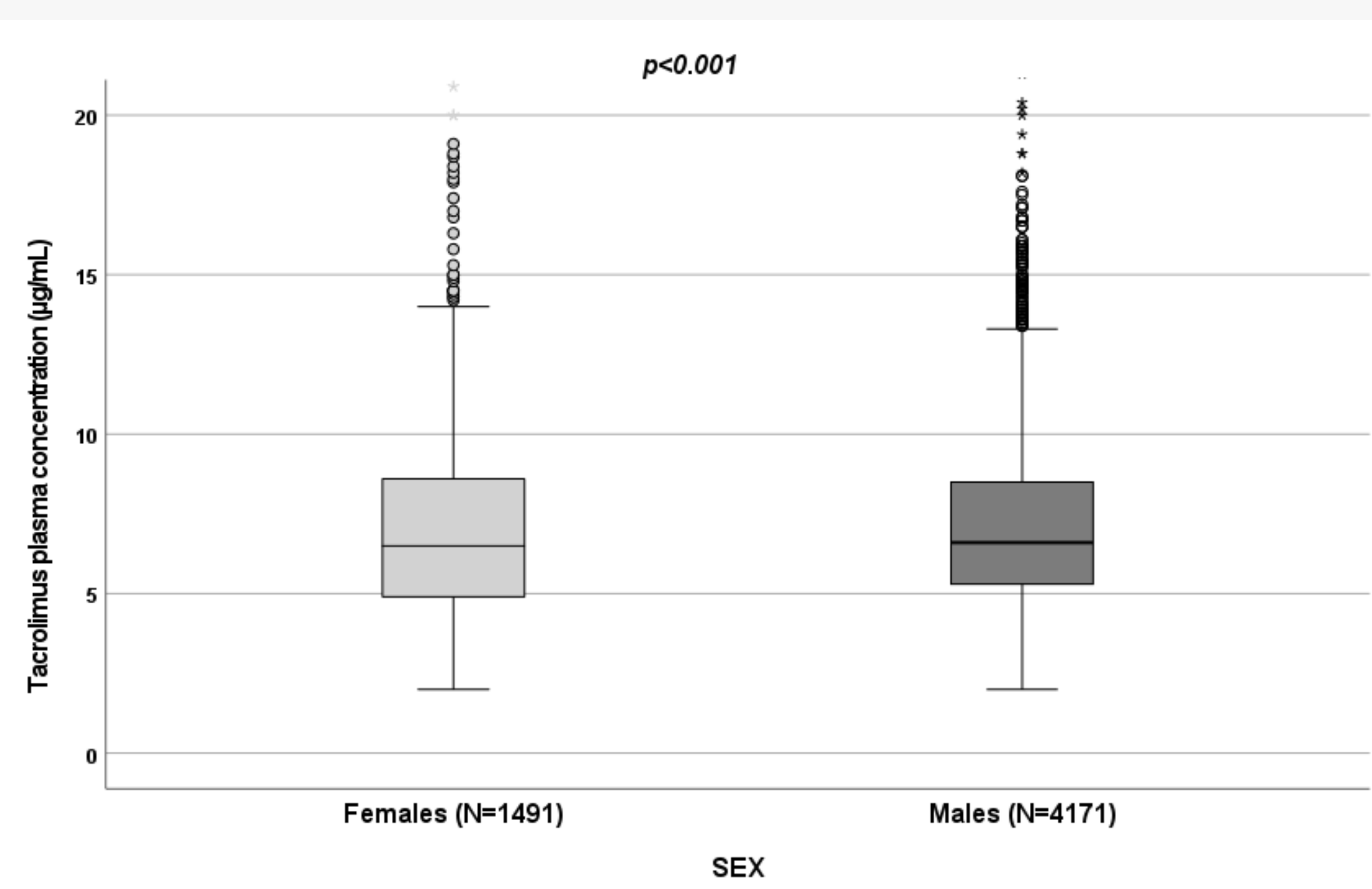
MATERIAL AND METHODS

Tacrolimus TDM values were analysed in a cohort of **160 patients** (72% male). A total of **5562 tacrolimus measurements** over a **4 years period** were evaluated. In the descriptive statistics, continuous and non-normal variables were shown as median values. Statistical dispersion of data measured in the interquartile range (IQR, quartile 1-quartile 3). The Mann-Whitney test was used to evaluate the influence of sex (male and female patients) on creatinine levels, eGFR levels and plasma concentrations of tacrolimus (level of statistical significance p-value < 0,05). All tests were performed with IBM SPSS Statistics 25.0 for Windows.

RESULTS

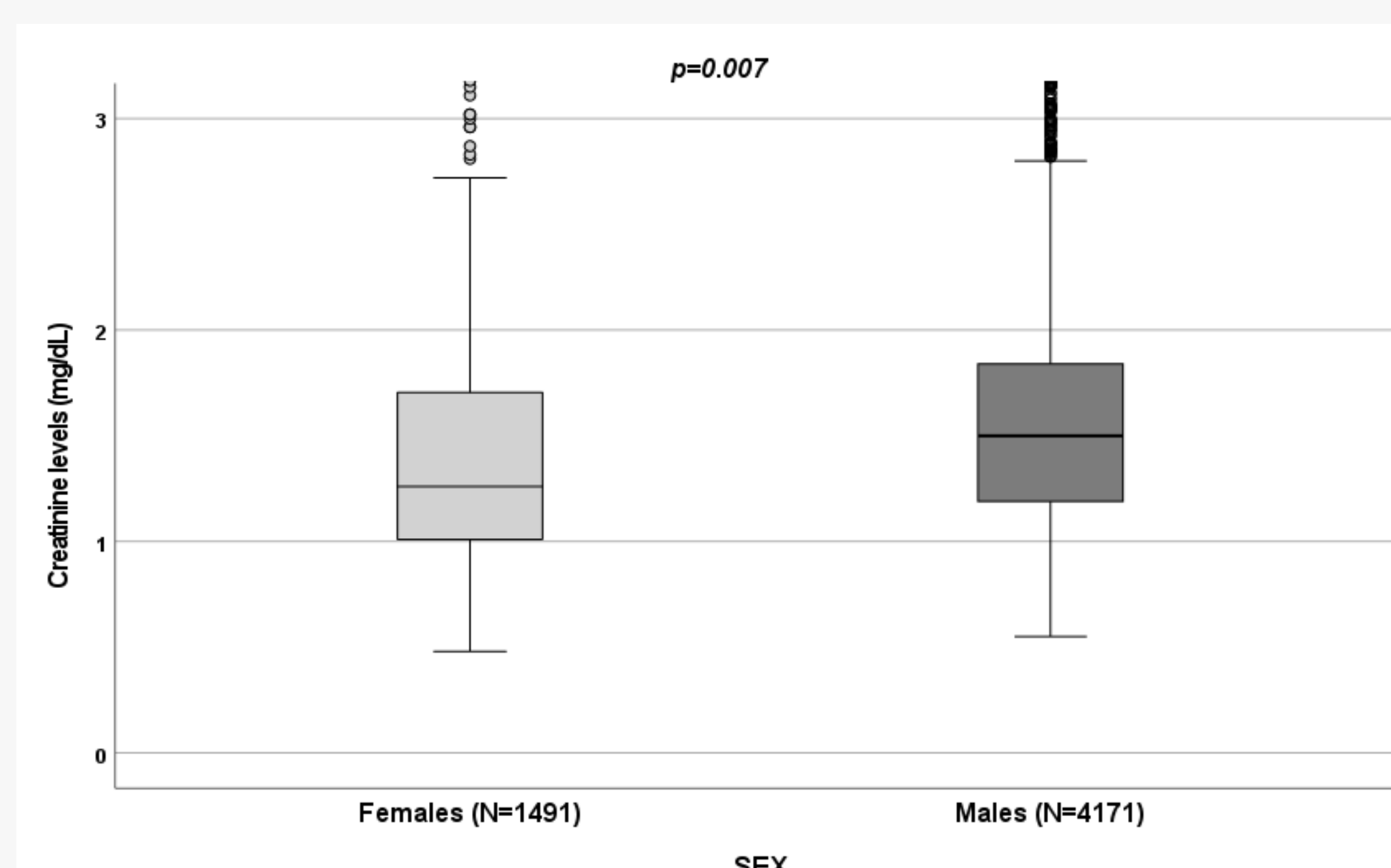
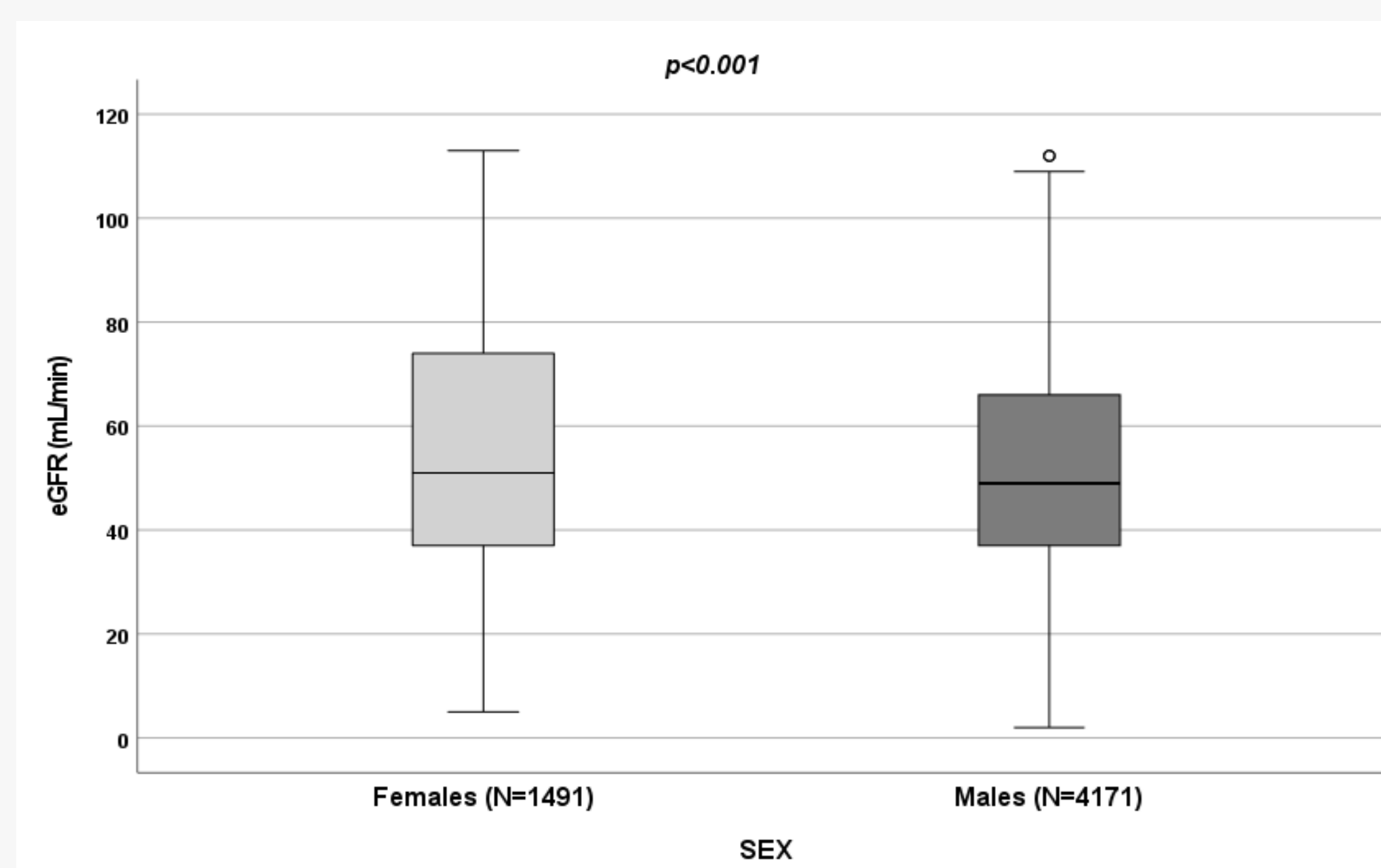
- The distribution analysis by sex shows that 73.7% (N=4171) of the 5662 measurements analysed were from male.

- Considering all the samples, the median TAC concentration ($\mu\text{g/ml}$) was 6.60. Separately evaluating sexes show that median TAC concentration was 6.60 and 6.50 for males and females respectively. The Mann-Whitney test show that sex influences TAC plasma concentration with statistical significance ($p < 0.001$).



	ALL (N=5662)	MALES (N=4171)	FEMALES (N=1491)
Creatinine (mg/dL)	1.45 (1.13-1.81)	1.50 (1.19-1.84)	1.26 (1.01-1.71)
eGFR (mL/min)	49 (37-68)	49 (37-66)	51 (37-74)
TAC Plasma Concentration ($\mu\text{g/mL}$)	6.60 (5.20-8.50)	6.60 (5.30-8.50)	6.50 (4.90-8.60)

- Sex influence was statistically significant also on creatinine levels (mg/dL) ($p = 0.007$) and eGFR levels (mL/min) ($p < 0.001$).



CONCLUSION

- Data disaggregation by sex variability can be the key to **improve patients' quality** of life and better individualize treatment and care.
- The **multidisciplinary approach** allows to optimize processes and obtain useful and reliable results.
- Further analysis is needed to further stratify patients and determine correlations useful to guide clinicians in monitoring drug therapy especially in polypharmacy patients.

