

Poster presentation

## Kidney tubular abnormalities in HIV patients treated with tenofovir with normal glomerular function – results of a prospective study on 284 patients

P Labarga\*<sup>1</sup>, P Barreiro<sup>1</sup>, L Martin-Carbonero<sup>1</sup>, S Rodríguez-Nóvoa<sup>1</sup>, C Solera<sup>1</sup>, J Medrano<sup>1</sup>, P Rivas<sup>1</sup>, M Albalade<sup>2</sup>, F Blanco<sup>1</sup>, V Moreno<sup>1</sup>, E Vispo<sup>1</sup>, E Valencia<sup>1</sup>, J González-Lahoz<sup>1</sup> and V Soriano<sup>1</sup>

Address: <sup>1</sup>Carlos III, Madrid, Spain and <sup>2</sup>Nephrology Department, Fundación Jimenez Díaz, Madrid, Spain

\* Corresponding author

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### Background

Long-term efficacy of antiretrovirals (ARV) may be blunted by cumulative toxicity. Tenofovir (TDF) is the most widely prescribed antiretroviral agent, and the preferred choice for most drug-naïve subjects. Although it shows a safe metabolic profile, much attention has been focused on kidney disturbances and bone demineralization. Since glomerular function is infrequently affected in patients treated with TDF, herein we report the results of extensive exam of the kidney tubular function.

### Methods

Prospective cross-sectional study in three groups of HIV patients, based on prior ARV experience: G1, ARV naïve; G2, under ARV but never exposed to TDF; and G3, currently under TDF. Glomerular function was assessed using creatinine clearance (CrCl). Tubular function was examined using three major (non-diabetic glycosuria, aminoaciduria, and fractional tubular resorption of phosphate) and two minor criteria (fractional excretion of uric acid and  $\beta$ 2 microglobulinuria). Variables were measured in plasma and 24-hr urine analysis. Tubular dysfunction was defined as  $\geq 2$  abnormal parameters (including  $\geq 1$  major).

### Summary of results

A total of 284 consecutive HIV patients were analyzed: 81 in G1, 49 in G2 and 154 in G3. Mean ARV exposure was 59 and 55 months in G2 and G3, respectively; mean TDF exposure in G3 was 36 months. The proportion of patients with tubular dysfunction was 12% in G1, 6% in G2 and 22% in G3 ( $p = 0.01$  for G2 vs. G3). The proportion of HIV patients on ARV therapy developing tubular dysfunction over time is depicted in Figure 1.

### Conclusion

Treatment with TDF is associated with an increased risk over time of kidney tubular damage in the absence of significant glomerular impairment. The long-term consequences of abnormal tubular dysfunction in patients on TDF warrant close examination.

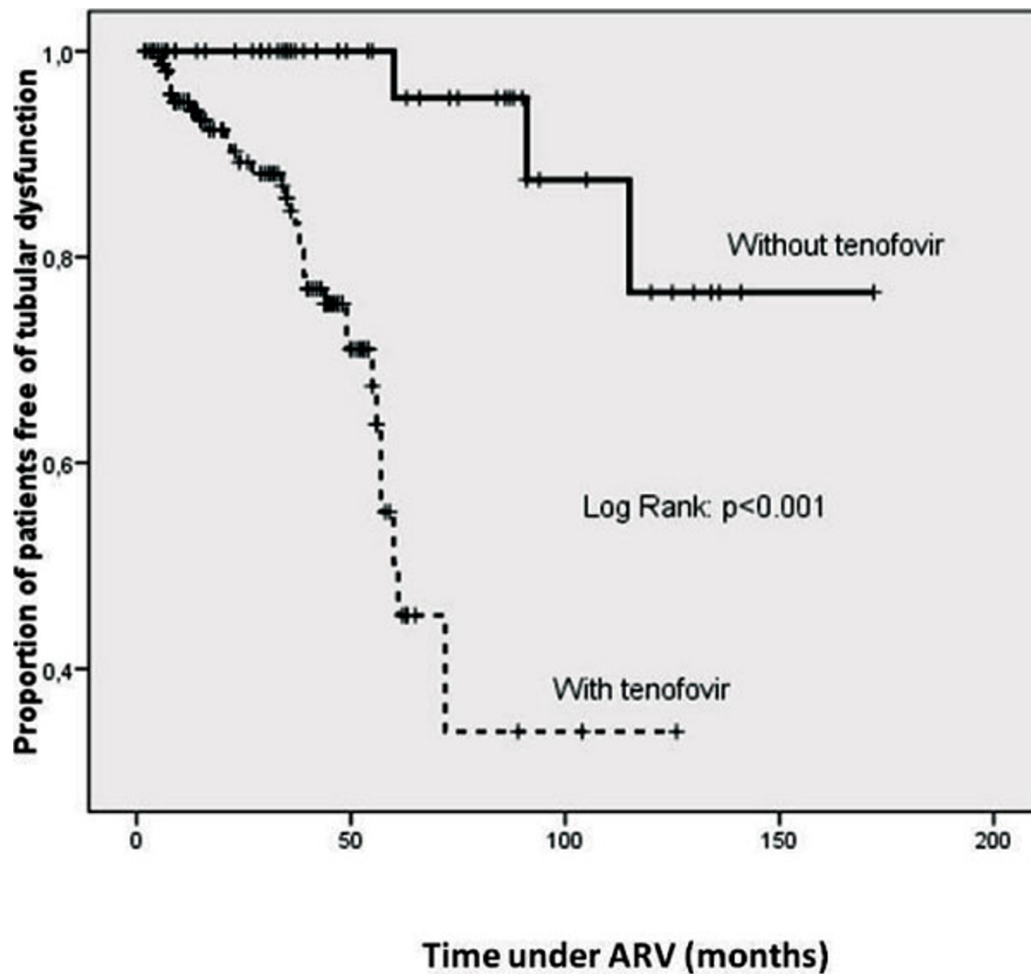


Figure 1

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