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RENAL TUBULAR DYSFUNCTION ASSOCIATED WITH TENOFOVIR BASED HAART IN PERINATALLY ACQUIRED HIV: THE NEED FOR PAEDIATRIC FORMULATIONS AND PHARMACOKINETIC STUDIES

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OBJECTIVE: Renal tubular dysfunction is a well recognised side effect of tenofovir disoproxil fumarate (TDF) in adult cohorts but data is sparse in paediatric populations. We describe renal tubular dysfunction in four adolescents with perinatal HIV infection receiving TDF based HAART.

METHODS: Retrospective case note audit of children who have ever received TDF based HAART commenced aged <18 years. All children on tenofovir undergo prospective screening by annual renal USS, three monthly serum electrolytes and urine Ca/cr, albumin/Cr or protein/Cr and retinal binding protein.

RESULTS: From a cohort of 139 HAART experienced children with perinatally acquired HIV infection, 51 (37%) had ever received Tenofovir. four (8%) patients, all female, had documented renal tubular leak at a median age of 16.9 years (range 12.3–18), ethnicity; black african (2), caucasian (1) asian/caucasian (1). None had Hepatitis B/C coinfection, prior renal disease, family history of renal disease or hypertension. Median duration of HAART 9 years (range 9–14) in three regimens (range 2–8), prior to TDF based HAART commenced at a median CD4 count of 335 cells/ μ L (range 20–1360), median VL 77,000 c/mL (range 1245–171,776). All received the adult dose of 300 mg TDF once daily, at initial weights of 32, 33, 36 and 59 kg with a dose range of 5.1–9.4 mg/kg for a median duration of 37 months (range 18–54) prior to TDF withdrawal. All were asymptomatic, identified on screening, with biochemical resolution within 4 months of TDF cessation.

CONCLUSIONS: Although unlicensed, tenofovir is widely used in HAART experienced paediatric

cohorts resulting in cases of renal tubular dysfunction. Paediatric formulations and pharmacokinetic studies are currently recruiting with results eagerly awaited.

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