

Autosomal dominant tubulointerstitial kidney disease.

Devuyst O^{1,2}, Olinger E³, Weber S⁴, Eckardt KU⁵, Kmoch S⁶, Rampoldi L⁷, Bleyer AJ⁸.

Abstract

Autosomal dominant tubulointerstitial kidney disease (ADTKD) is a recently defined entity that includes rare kidney diseases characterized by tubular damage and interstitial fibrosis in the absence of glomerular lesions, with inescapable progression to end-stage renal disease. These diseases have long been neglected and under-recognized, in part due to confusing and inconsistent terminology. The introduction of a gene-based, unifying terminology led to the identification of an increasing number of cases, with recent data suggesting that ADTKD is one of the more common monogenic kidney diseases after autosomal dominant polycystic kidney disease, accounting for ~5% of monogenic disorders causing chronic kidney disease. ADTKD is caused by mutations in at least five different genes, including *UMOD*, *MUC1*, *REN*, *HNF1B* and, more rarely, *SEC61A1*. These genes encode various proteins with renal and extra-renal functions. The mundane clinical characteristics and lack of appreciation of family history often result in a failure to diagnose ADTKD. This Primer highlights the different types of ADTKD and discusses the distinct genetic and clinical features as well as the underlying mechanisms.