Chronic Kidney Disease (CKD)

Progressive loss of kidney function over prolonged period of time

NO

13%

Diabetes 42%

Hypertension 28%

Glomerular diseases 7%

Miscellaneous 6%

Unknown 4%

Type 1 diabetes 4%

Cystic/Hereditary 4%

Nephritis 3%

Tumors 3%

of Death in the US

Soumaya Allouch - ID# 1769 - AMPK Activation Attenuates Albumin-induced Alterations in Renal Tubular Cells In Vitro
Proteinuria, AMPK and CKD

Proteinuria → ER stress → AKT → AMPK

mTOR, mammalian target of rapamycin; EMT, epithelial-to-mesenchymal transition; AMPK, AMP-activated protein kinase

Tubulo-interstitial Injury

mTOR, mammalian target of rapamycin; EMT, epithelial-to-mesenchymal transition; AMPK, AMP-activated protein kinase
Clinical implications

Metformin could be used clinically to activate AMPK in the kidney to prevent the onset & progression of CKD

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