Genome-wide linkage analysis of serum creatinine in three isolated European populations.

Abstract:
There is increasing evidence for a role of genetic predisposition in the etiology of kidney disease, but linkage scans have been poorly replicated. Here we performed a genome-wide linkage analysis of serum creatinine on 2859 individuals from isolated villages in South Tyrol (Italy), Rucphen (The Netherlands) and Vis Island (Croatia), populations that have been stable and permanently resident in their region. Linkage of serum creatinine levels to loci on chromosomes 7p14, 9p21, 11p15, 15q15-21, 16p13, and 18p11 was successfully replicated in at least one discovery population or in the pooled analysis. A novel locus was found on chromosome 10p11. Linkage to chromosome 22q13, independent of diabetes and hypertension, was detected over a region containing the non-muscle myosin heavy chain type II isoform A (MYH9) gene (LOD score=3.52). In non-diabetic individuals, serum creatinine was associated with this gene in two of the three populations and in meta-analysis (SNP rs11089788, P-value=0.0089). In populations sharing a homogeneous environment and genetic background, heritability of serum creatinine was higher than in
outbred populations, with consequent detection of a larger number of loci than reported before. Our finding of a replicated association of serum creatinine with the MYH9 gene, recently linked to pathological renal conditions in African Americans, suggests that this gene may also influence kidney function in healthy Europeans.

Zeitschriftentitel / Abkürzung:
Kidney Int

Jahr: 2009

Band: 76

Heft / Issue: 3

Seiten: 297-306

Sprache: eng


Print-ISSN: 0085-2538

TUM Einrichtung:
r Humangenetik

Occurences:
· Einrichtungen > Fakultäten > Fakultät für Medizin > Kliniken und Institute > Institut für Humangenetik > 2009

entries: