

Diagnostic and Prognostic Biomarker for early stage Polycystic Kidney Disease (ADPKD)

Technology

Autosomal dominant polycystic kidney disease (ADPKD) is a slowly progressive disease associated with renal cysts and development of renal failure leading to end-stage renal disease (ESRD). With the availability of potential therapies, one major obstacle remains the lack of readily available parameters that identify patients at risk for disease progression and/or determine the efficacy of therapeutic interventions within short observation periods. To facilitate therapeutic approaches in ADPKD, biomarkers are needed that predict disease progression even before deterioration of renal function and irreversible kidney damage has occurred. Increased total kidney volume (TKV) correlates with disease progression, but it remains unknown how accurate this parameter can predict disease progression at early stages.

We observed that secreted Frizzled-Related Protein 4 (sFRP4) serum concentrations are elevated in ADPKD patients, correlating with the degree of renal failure. sFRP4 serum levels are a helpful information to select patients with persevered renal function and early ADPKD disease.

Innovation

- sFRP4 is an early stage diagnostic and prognostic biomarker
- Identification of ADPKD patients at risk for rapid disease progression
- elevated sFRP4 levels are detectable in blood, cyst fluid and urine of ADPKD patients

Application

- ADPKD patients with early stage disease will benefit from future therapeutic interventions
- Determination of the efficacy of therapeutic interventions within short observation periods

Developmental Status

Tested in a large cohort of patients (429 patients) - sFRP4 serum concentrations were determined over the course of 18 months with additional follow-up data at 48 and 60 months to correlate baseline sFRP4 levels with late outcome.

- Zschiedrich et al. (2015) Nephrol Dial Transplant 0,1-6

Responsible Scientist

Prof. Dr. Gerd Walz
University Medical Center Freiburg,
Renal Division

Branch

Diagnostic

Patent Status

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Freiburg University and the Freiburg
University Medical Center



Contact

Dr. Claudia Skamel
Campus Technologies Freiburg GmbH
Stefan-Meier-Str. 8 | D-79104 Freiburg
Email: Claudia.Skamel@campus-technologies.de
Tel: +49 (0)761 203-4987
Fax: +49 (0)761 203-5021