

Preclinical mousemodel of renal cysts

Introduction:

Autosomal-dominant polycystic kidney disease (ADPKD) is a common genetic disorder frequently leading to cysts that eventually replace most of the normal renal parenchyma finally resulting in severe enlargement of the kidneys. Renal failure occurs in most cases by the age of 50. Survival depends on lifelong haemodialysis or kidney transplantation. No alternative clinical treatment is currently available.

In this study we established a MRI-Protocol for the evaluation of a novel therapy in the established PCY model for renal cysts. Using a dedicated animal scanner we measured the total volume of mice kidneys and the ratio of cyst volume to renal volume in two therapeutical groups and one control group at designated time points during therapy.

The goal of this Study was detailed monitoring of a preclinical therapy in a mouse model differentiating effects on total renal volume and on cystic volume.

Fig.: RARE Images with TE=36ms of normal mouse kidney (a), untreated PCY-mouse model (b) and treated PCY-mouse model (c). Bar in the picture is indicating 1cm.