Arterial Functions Deteriorate More Rapidly than Renal Functions over 4 Years in Patients with Autosomal Dominant Polycystic Kidney Disease with Preserved Renal Functions

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Introduction

Arterial stiffness is associated with poor cardiovascular outcomes and increased mortality. Early arterial stiffness has been shown in autosomal dominant polycystic kidney disease (ADPKD) patients with preserved renal function. However, to our knowledge, no prospective study evaluated changes in arterial functions in patients with ADPKD. We aimed to monitor renal and arterial functions in patients with ADPKD with preserved renal functions.

Methods

A total of 25 ADPKD patients and 12 controls were included. Data on patient characteristics, biochemical parameters, and arterial stiffness were recorded at baseline and at the end of the study (4th year). Repeated measures test was used to compare the change in estimated glomerular filtration rate (eGFR) and % change in arterial functions. Determination of independent correlates of the change in eGFR and arterial functions was performed by linear regression analyses.

Results

There was a similar decline in renal functions over the study period in both groups (figure 1). However, arterial functions deteriorated more rapidly in the ADPKD group (figure 2, 3). Having ADPKD was the only independent factor associated with decline in arterial functions.

Conclusion

In this study, there was significant decreases in arterial elasticity characteristics in the ADPKD group compared with the control group despite a similar decline in renal functions. Monitoring of arterial stiffness that is readily measured noninvasively may be as important as monitoring of renal functions in ADPKD patients with preserved renal functions.

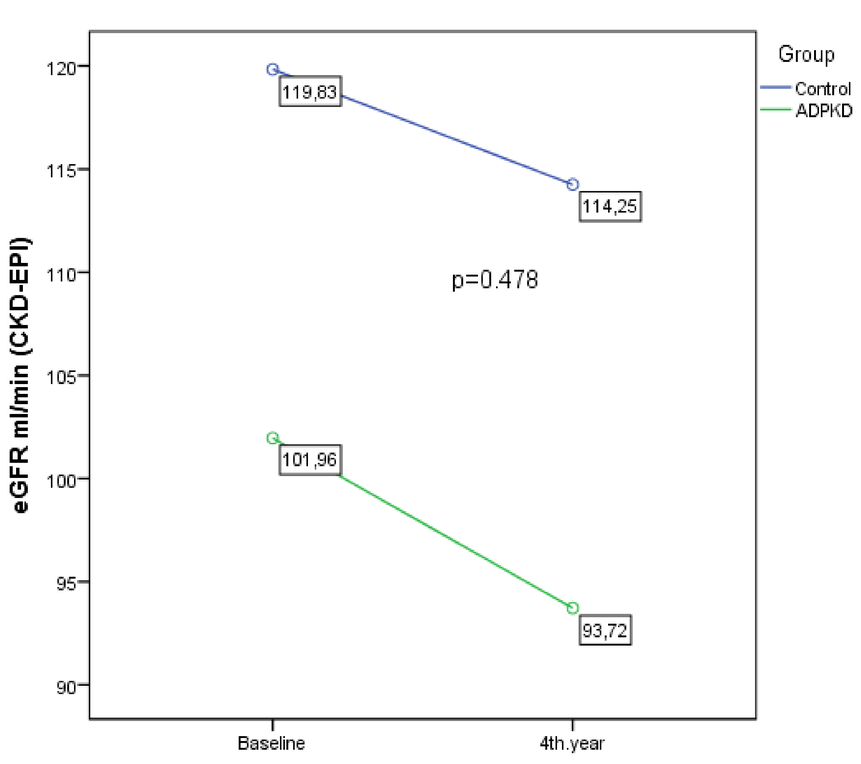

Figure 1

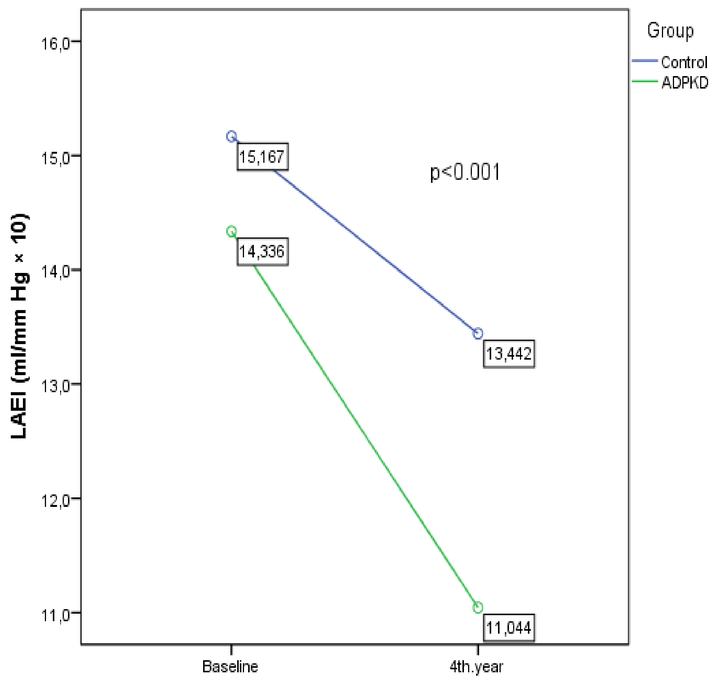

Figure 2

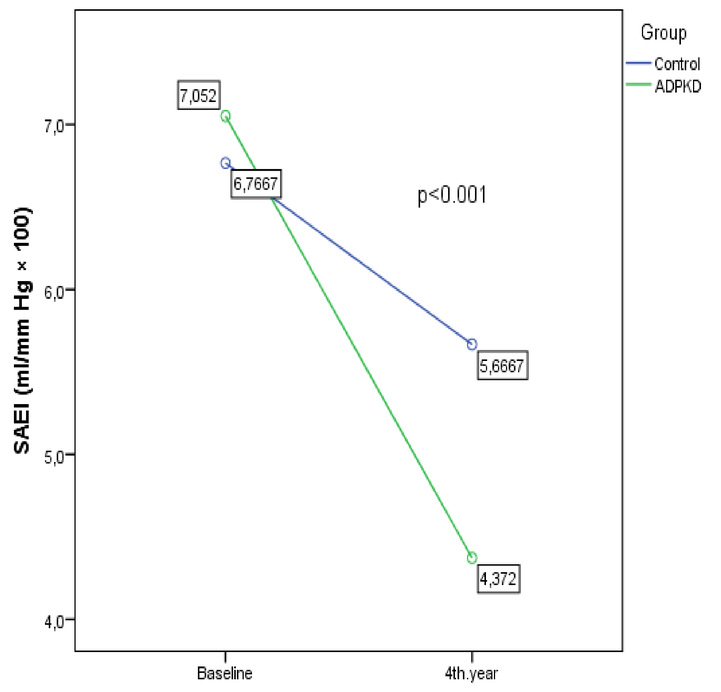

Figure 3

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