

HYPERTENSION IN ADPKD PATIENTS

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Hypertension is the most common manifestation of autosomal dominant polycystic kidney disease (ADPKD). It occurs in 50 to 70% of cases prior the reduction of the GFR, with an average age of onset of 30 years (but also in children). The most accredited mechanism is activation of the RAAS. Fifty % of 40-years-old patients have left ventricular hypertrophy.

Early treatment of hypertension reduces cardiovascular morbidity and mortality. The use of ACE inhibitors was prevalent compared to other antihypertensive drugs. The increase of total kidney volume (TKV) is statistically related to the main clinical manifestations.

The target of our study was to evaluate the correlation between hypertension and TKV in a sample of outpatients with ADPKD.

70 patients were studied and the clinical features detected at the time of magnetic resonance imaging (MRI) are shown in Table 1.

| | |
|----------------------------------|--------------------------|
| Age (median - range) | 46 yr (15-73) |
| M/F | 32/38 |
| Creatinine (median - range) | 1,7 mg/dl (0,6-7,1) |
| e-GFR (CKD-EPI) (median - range) | 58,7 ml/min (6-130) |
| Ht-TKV (median - range) | 1505,8 ml/m (136,9-5952) |
| Hypertension (%) | 56 (80%) |
| Hypertension onset <35 yr | 24 (42,8%) |
| Use of ACE/ARB | 47 (84%) |
| GFR < 60 ml/min (%) | 38 (54,2%) |

The e-GFR was calculated with the CKD-EPI. TKV height-adjusted (Ht-TKV) were calculated by non-contrast enhanced MRI using the ellipsoid formula. Table 2 shows the relationship between Ht-TKV, frequency of hypertension and patients with GFR <60 ml/min.

| Ht-TKV ml/m | Age (median) yr | Hypertension % | GFR <60 ml/min % |
|-------------|-----------------|----------------|------------------|
| ≤ 700 | 39,48 | 55,6 | 11,1 |
| 701-1500 | 49,99 | 72,7 | 45,5 |
| >1500 | 50,13 | 96,7 | 86,7 |

The prevalence of arterial hypertension is related to the increase in TKV, before kidney failure appears. Moreover, even if performed on a small sample of patients, our study confirms TKV as a biomarker able to provide significant informations about clinical manifestations of the disease.