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Outcomes of pediatric renovascular hypertension: a single-center experience

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Objectives: Renovascular hypertension (RVH) is rare but treatable cause of secondary hypertension in children. We aimed to evaluate clinical presentations and outcomes of pediatric patients with RVH.

Methods: We retrospectively reviewed medical records of patients with renovascular disease at our center between 1994 and 2019. Clinical courses including status of hypertension control with preservation of renal function during follow up were evaluated.

Results: 20 patients were diagnosed as RVH. Median age at diagnosis was 10.1 (range 1.3 – 17.2) years, and median follow up period was 8.7 (range 0.1 – 24.6) years. 50 % presented with incidently detected high blood pressure, 25 % first admitted due to heart failure symptoms, and the rest presented with neurologic symptoms including seizure or paraplegia. 3 patients had underlying Moyamoya disease. All patients needed antihypertensive medications for blood pressure control; 7 patients gained good control of blood pressure only with antihypertensive agents including angiotensin converting enzyme inhibitor/angiotensin receptor blocker (ACEI/ARB), 8 patients who underwent interventional angioplasty all still needed antihypertensive agents for blood pressure control. Four patients initially showed profoundly low relative function of involved kidney on diuretic scan, leading to nephrectomy, three of whom could successfully discontinue all antihypertensive agents. Remaining one patient showed progressive deterioration of relative unilateral renal function during 13 years, ended up with nephrectomy, but couldn't discontinue ACEI. Glomerular filtration rate was within normal range for all patients at diagnosis. For patients without nephrectomy, mean relative function of the involved kidney on diuretic scan was 33.5 ± 11.4 % at diagnosis. There was no significant change or deterioration of relative renal function during follow up period, although they all used ACEI/ARB.

Conclusions: Antihypertensive medications including ACEI/ARB were safely used with no deterioration of the renal function with or without angioplasty. Pediatric RVH is well managed with preserved renal function in long-term follow up.