

# PREVALENCE OF HYPERTENSIVE OCTOGENARIANS WITH REDUCED GFR AND HYPERKALEMIA ON ARB+HCTZ COMBINATIONS

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**INTRODUCTION AND AIMS:** Prevalence of hypertension is increased in elderly population. Although most of the randomized controlled trials have excluded elderly patients, several hypertension guidelines recommend thiazide diuretics(HCTZ) and angiotensin receptor blockers (ARBs) as first line therapy for the elderly hypertensive patient. On the other hand elderly patients have increased prevalence of renal artery disease, reduced GFR, diminished potassium excretion and reduced aldosterone secretion, rendering them to be susceptible to unwanted effects of ARBs and hydrochlorothiazide. In this cross-sectional study we analyzed the rate of octogenarians on ARB+ HCTZ fixed dose combinations despite having high serum potassium and creatinine levels.

**METHODS:** Fifty hypertensive octogenarians receiving fixed dose ARB+HCTZ combinations referred to nephrology outpatient clinics were evaluated for diminished GFR and hyperkalemia. Their mean age was 82 years. Thirty five (%70) were female and 15 (30%) were male. 15 patients (%30) were diabetic. Blood samples were drawn in the morning after 10 hours of fasting. Serum potassium levels were measured by a flame photometer and serum creatinine by AbbottC8000. Estimated GFR values were calculated according to CKD-EPI formula. Twenty five percent of the patients were receiving 25 mg of HCTZ daily while 75% were on 12.5 mg HCTZ combinations. The daily doses and types of ARBs were as follows: Losartan 100 mg 36%, Telmisartan 80 mg 24%, Valsartan 80 mg 8%, Valsartan 160 mg 12%, Irbesartan 300 mg 20%, Candesartan 16 mg 10%. The mean duration of treatment with these combinations was 18 months. **RESULTS:** Mean blood pressure was 132 mm Hg systolic and 84 mm Hg diastolic. 32 patients (64%) were receiving another hypertensive agent; 12 patients (24%) a beta blocker, 14 patients (28%) a calcium channel blocker and 6 patients (12%) an alpha blocker. Mean serum potassium level was 4.4 mEq/L and serum creatinine level was 1.1 mg/dL. 16 patients (32%) had serum potassium levels above 5.0 mEq/L. Mean serum potassium level among hyperkalemic patients were 5.4 mEq/L (Range 5.1-6.2 mEq/L). 28 patients (56%) had eGFR above 60 ml/min. CKD Stage in the remaining 22 patients (%44) were: CKD Stage IV in 2 patients (4%), Stage IIIb in 8 (%16) and Stage IIIa in 12 (%24) patients.

**CONCLUSIONS:** Elderly patients have a high prevalence of hypertension most requiring more than two antihypertensive agents. ARB+HCTZ combinations are among the first line antihypertensive agents in most of the guidelines and are among the commonly prescribed agents. Renal vascular disease and a tendency to develop hyperkalemia pose elderly patients to adverse effects of these combinations. This study shows that one in three octogenarians treated with these combinations have hyperkalemia and reduced GFR. Additionally despite these adverse effects, these patients were re-prescribed these combinations for a mean duration of 18 months. These findings provides additional support for the ongoing efforts for developing special hypertension guidelines for the elderly.

