

MANAGEMENT OF RESISTANT HYPERTENSION (RHT): ALDOSTERONE ANTAGONISTS OR INTENSIFICATION OF DIURETIC THERAPY ?

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INTRODUCTION

No consensus has been established which is the best fourth-line agent in patients with RHT.

We previously demonstrated that bioimpedance-guided reduction of extracellular volumen with intensification of diuretic therapy can control BP in patients with RHT.

[NDT(2012)27 iv31-iv37].

OBJECTIVE

To assess the effect of intensifying diuretic treatment with a loop diuretic (furosemide) or an aldosterone antagonist (spironolactone) on control of BP in patients with RHT.

METHODS

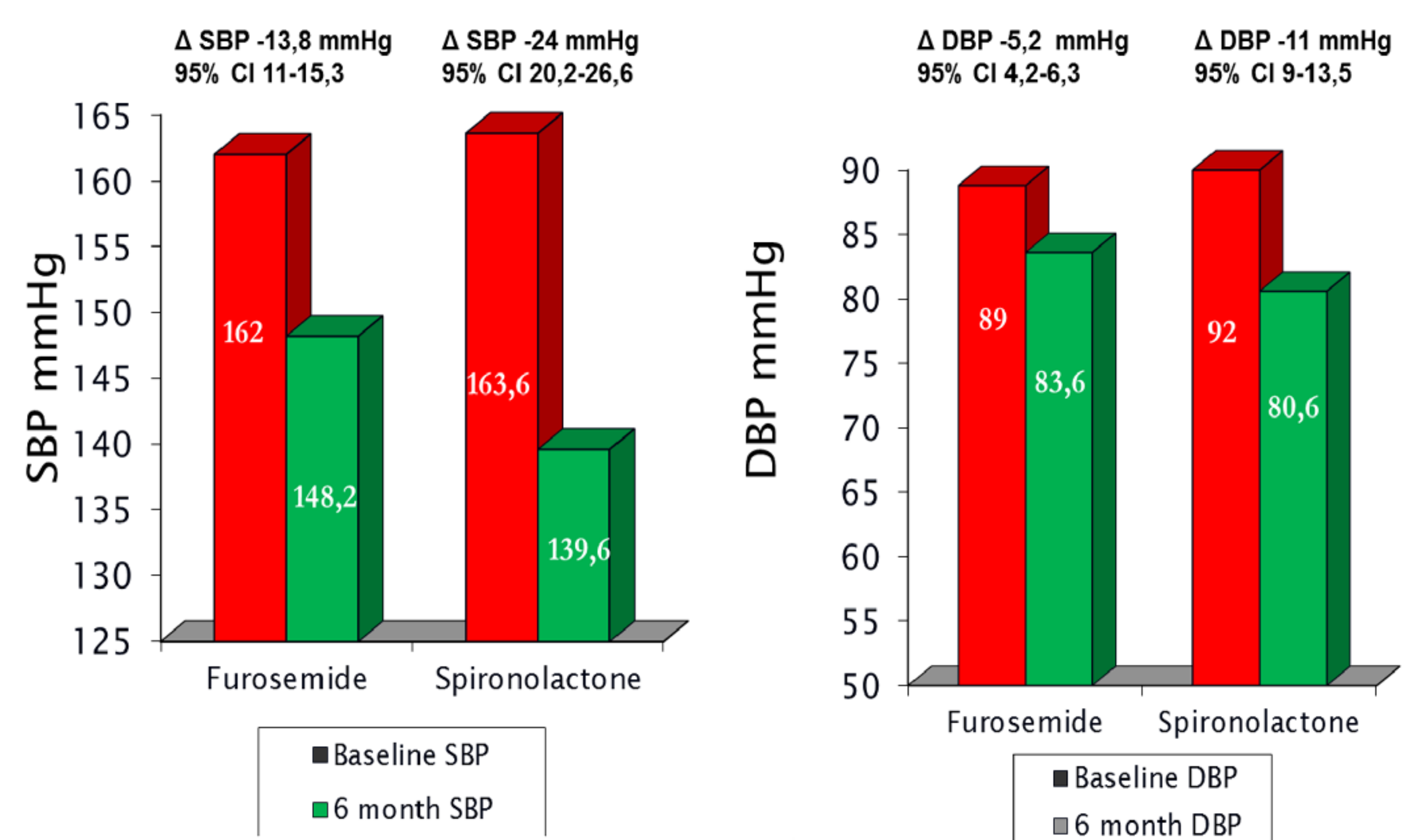
Study population comprised 30 patients with RHT (mean of 4.1 ± 0.9 antihypertensive drugs/patient) who were divided into 2 treatment arms according to clinical criteria. Fifteen patients received furosemide 40 mg/day and 15 patients spironolactone 25 mg/day in combination with habitual medication. Ambulatory BP monitoring was performed baseline, 3 months, and 6 months

RESULTS

Baseline characteristics of patients in spironolactone and furosemide group

	Furosemide (n=15)	Spironolactone (n=15)	P
Age (years)	67,2±7,1	65,4±10,9	ns
Gender (% men)	11 (73,3)	10 (66,7)	ns
DM (%)	10 (66,7)	7 (46,7)	ns
BMI (Kg/m ²)	29,6±3,9	33,1±7,6	ns
SBP (mm Hg)	162±7,9	163,6±8,6	ns
DBP (mm Hg)	88,8±6,8	91,6±6,8	ns
N antihypertensive drugs	3,9±1	3,7±0,5	ns
eGFR (ml/min/1.73m ²)	50,3±16	61,4±15,6	ns
Antihypertensive class			
ACE inhibitors or ARB	15 (100%)	15 (100%)	ns
B blockers	9 (60%)	10 (66,7%)	ns
Calcium channel blockers	14 (93,3%)	14 (93,3%)	ns
Diuretics	15 (100%)	15 (100%)	ns
Urinary albumin/creatinine ratio (mg/g)	414±584	173±268	ns
Serum potassium (mmol/L)	4,4±0,4	3,9±0,22	<0.01
Serum bicarbonate (mmol/L)	23,6±2,7	24,1±2,6	ns
Uric acid (mg/dl)	6,9±0,9	7,4±1,1	ns
Plasma aldosterone (ng/dl)	15,2±4	16,5±6,2	ns
ARR	21,3±25	16,4± 14	ns
Sodium 24 h urine (mmol/24 h)	189±55	160±38	ns

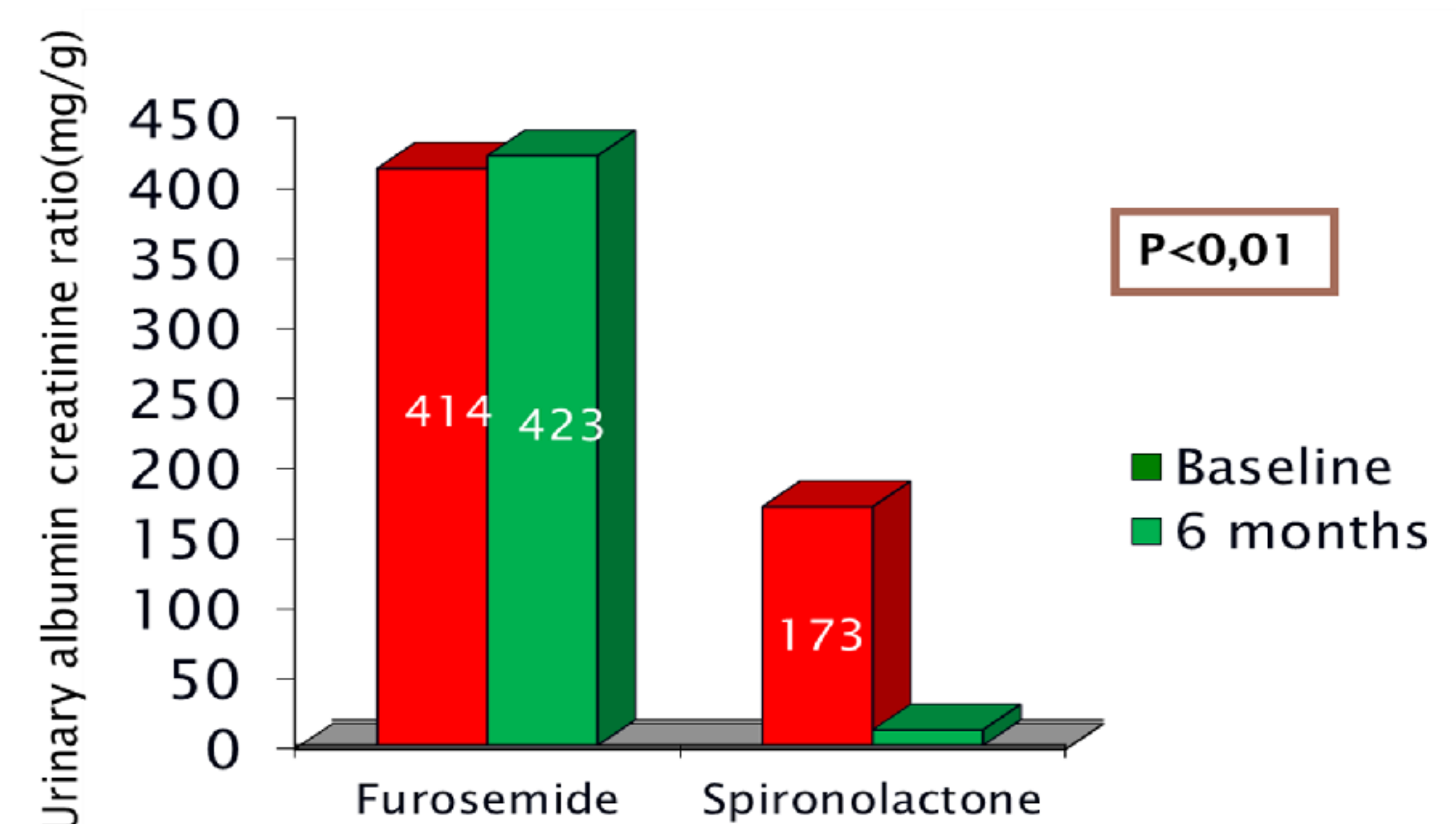
Baseline BP and at 6 months follow-up in spironolactone and furosemide group



Factors associated with BP control at 6 months follow-up. Multiple regression

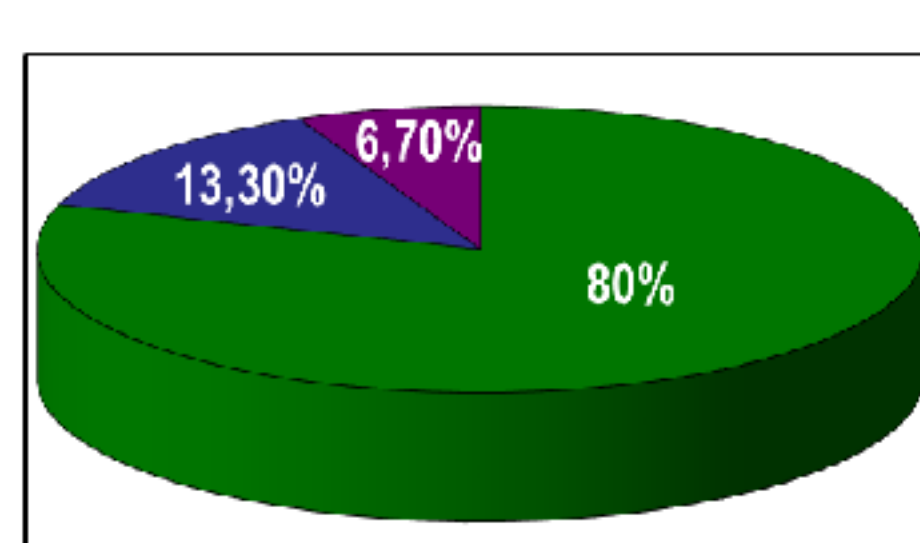
	Sig	Exp (B)	CI 95% for Exp (B)
Furosemide treatment	0,017	0,235	0,029-0,189
Gender male	0,133	4,,9	0,616-39,2
DM	0,061	7,4	0,913-61,2
Age	0,052	1,396	0,997-1,954
BMI	0,081	0,374	0,124-1,129
SBP basal	0,064	0,536	0,277-1,036
DBP basal	0,067	2,270	0,945-5,450
Number antihypertensive drugs	0,090	10,814	0,692-169,010
eGFR	0,259	0,908	0,769-1,073
Aldosterone basal levels	0,432	1,043	0,976-1,116

Urinary albumin creatinine ratio baseline and 6 months follow-up in spironolactone and furosemide group



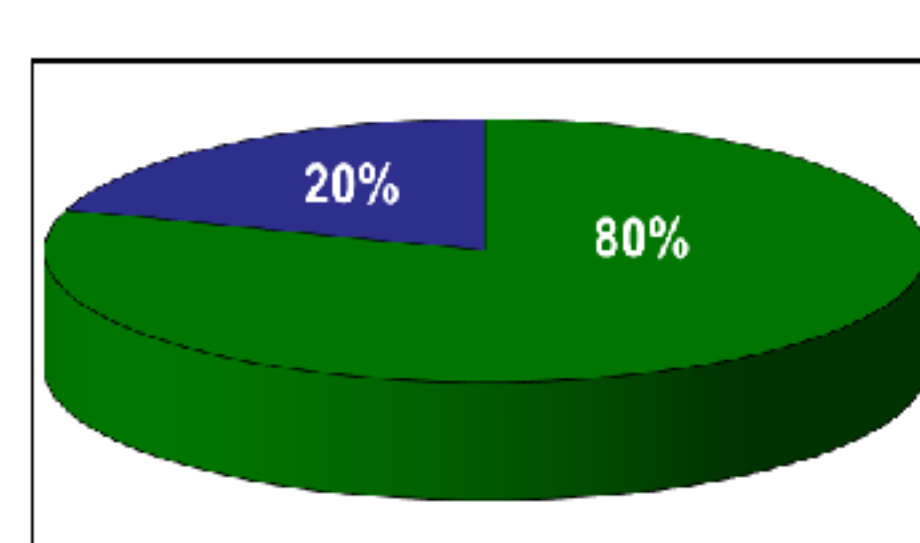
Adverse events

Spironolactone



■ No adverse events
■ Mild hyperkalemia
■ Breast discomfort

Furosemide



■ No adverse events
■ Hyperuricemia

CONCLUSION

- Spironolactone is more effective than furosemide for control of BP in RHT patients, with a positive added effect on albuminuria
- Spironolactone is safe in patients with mild kidney impairment, although serum potassium should be closely monitored, especially in diabetics.

