EFFECT OF ANTIHYPERTENSIVE THERAPY ON COGNITIVE DECLINE IN PATIENTS WITH MILD-TO-MODERATE ALZHEIMER'S DISEASE

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Objective: The impact of antihypertensive therapy on cognitive decline in subjects with already declared Alzheimer's disease (AD) remain controversial. Although some studies have shown that use of antihypertensive drugs was associated with a reduced rate of cognitive impairment and dementia, other research found no significant difference between the active treatment and placebo groups on the incidence of dementia. The aim of the study was to evaluate prospectively the impact of antihypertensive therapy in terms of slowing down cognition decline in subjects with mild-to-moderate AD.

Methods: we conducted a prospective study including 270 outpatients suffering from AD according to the NINCDS-ARDRA criteria. Each year, cognitive functions were assessed by the MMSE during a follow-up period of 3 years. During this follow-up cognitive functioning was compared considering the use of antihypertensive therapy or not. All patients were treated with a Cholinesterase Inhibitor (ChEI), the first line therapy for AD. Patients with comorbid depression or other dementia subtypes were excluded.

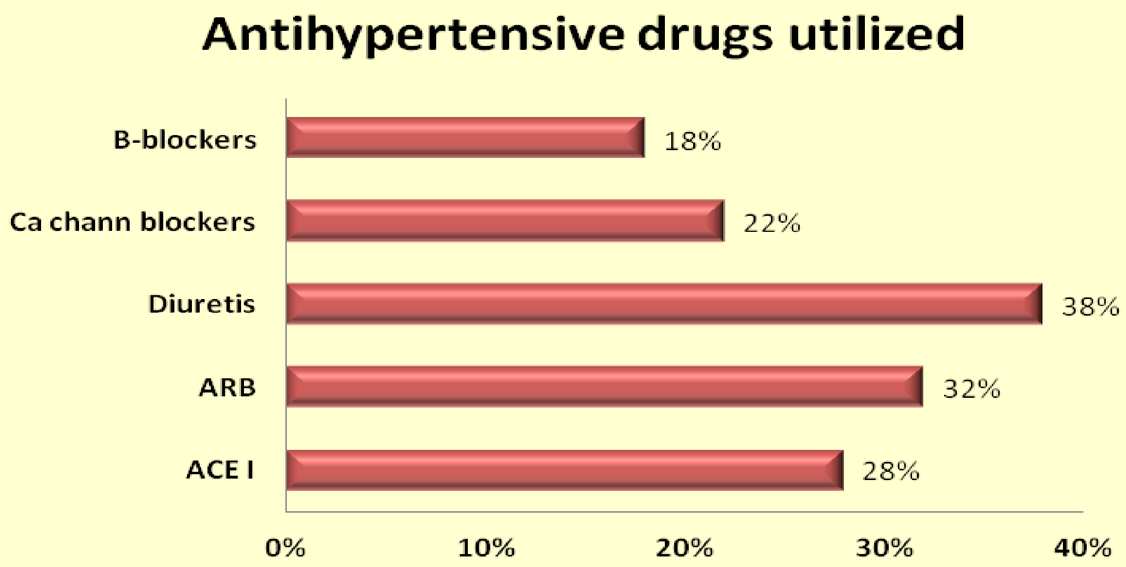
Results: 270 (84.7%) of 297 patients completed the study. Mean age was 74 ± 8.2 years. 62.22% of patients (168/270) were female; 102 (37.77%) were male. 52.22% (141/270) of the population used an antihypertensive therapy. At inclusion, the mean MMSE was similar in both groups (antihypertensive therapy vs no antihypertensive therapy 22.48 ± 4.54 vs 22.21 ± 4.82, p=0.56). After a 3 year follow-up, the cognitive decline was significantly less important among patients using antihypertensive therapy compared to those without antihypertensive therapy (MMSE scores = 22.08 ± 5.12 vs 21.26 ± 5.29 at 1 year; 20.92 ± 5.64 vs 19.53 ± 5.76 at 2 years and 18.95 ± 6.75 vs 17.48 ± 6.38 at 3 years, p<0.001 for all periods).

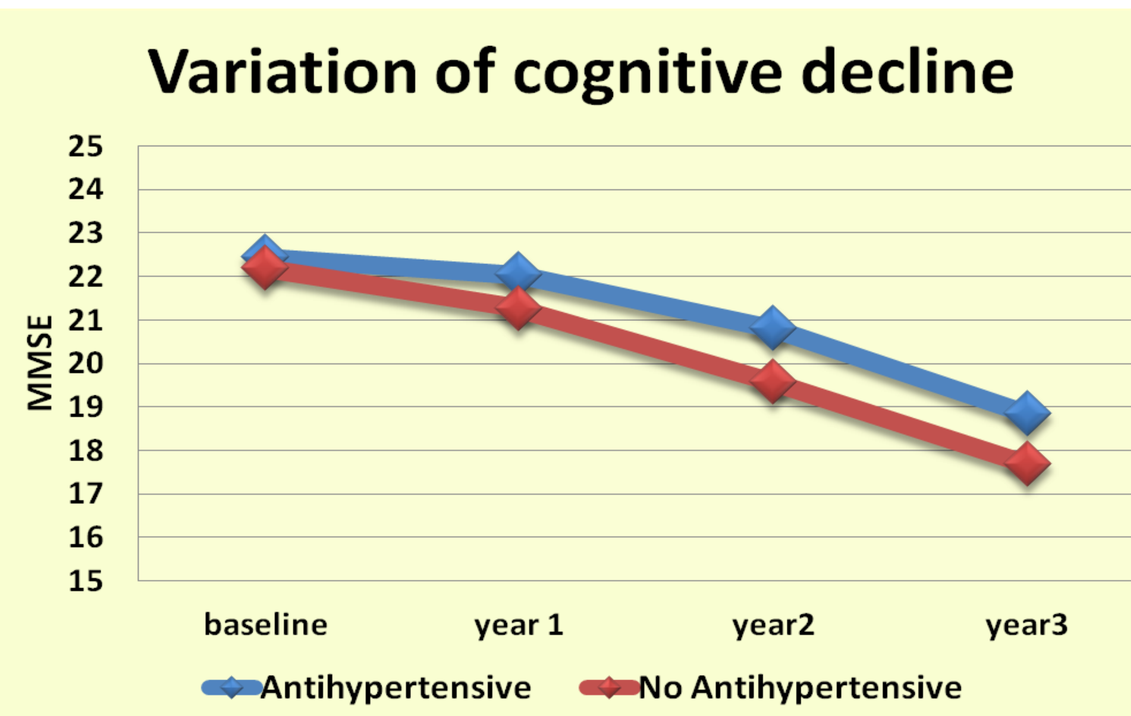
Discussion: There was a significant difference in the MMSE median rate of decline for patients taking antihypertensive therapy compared to control group. ACE inhibitors and diuretics produced a slower rate of cognitive decline (p<0.001).

Conclusions: These results suggest a positive effect of antihypertensive therapy on cognitive function among patients suffering from AD, by slowing down cognitive decline during a long-term follow-up. Further prospective randomized studies comparing different antihypertensive classes are needed to determine whether certain antihypertensive classes provide greater benefits than others.

Baseline characteristics of the patient population (n=270)

	AHT	No AHT
MALES (n, %)	50/149 (33.55)	52/131(39.69)
FEMALES (n, %)	89/149 (59.73)	79/131 (60.30)
MEAN AGE (yr ± SD)	74.2 ± 8.2	74.8 ± 8.1
MEAN EDUCATION (yr ± SD)	5.2 ± 2.9	5.3 ± 2.7
MEAN AD DURATION (yr ± SD)	5.3 ± 1.4	5.4 ± 1.3
MMSE (total mean score ± SD)	22.2 ± 1.8	22.4 ± 1.6
HIS (total mean score ± SD)	3.4 ± 1.8	3.5 ± 1.9





MEAN CHANGE IN MMSE SCORE FOLLOWING EXPOSURE TO DIFFERENT ANTIHYPERTENSIVE DRUGS

Medication	MMSE change	P value
Angiotensin- Converting Enzyme inhibit.	- 0.89	0.001
Angiotensin Receptors Blockers	- 0.42	0.014
Diuretics	- 0.52	0.016
Calcium channel blockers	- 0.38	0.083
β-blockers	- 0.21	0.018

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