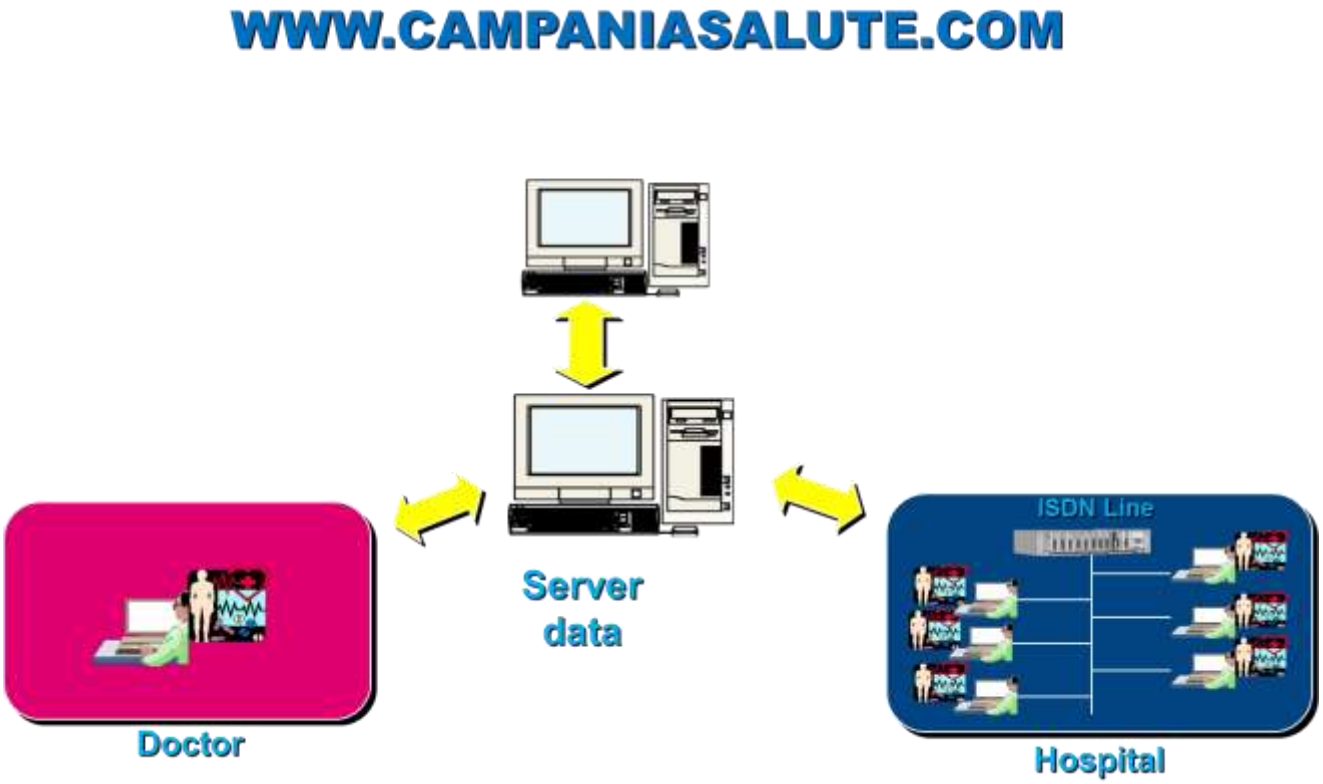
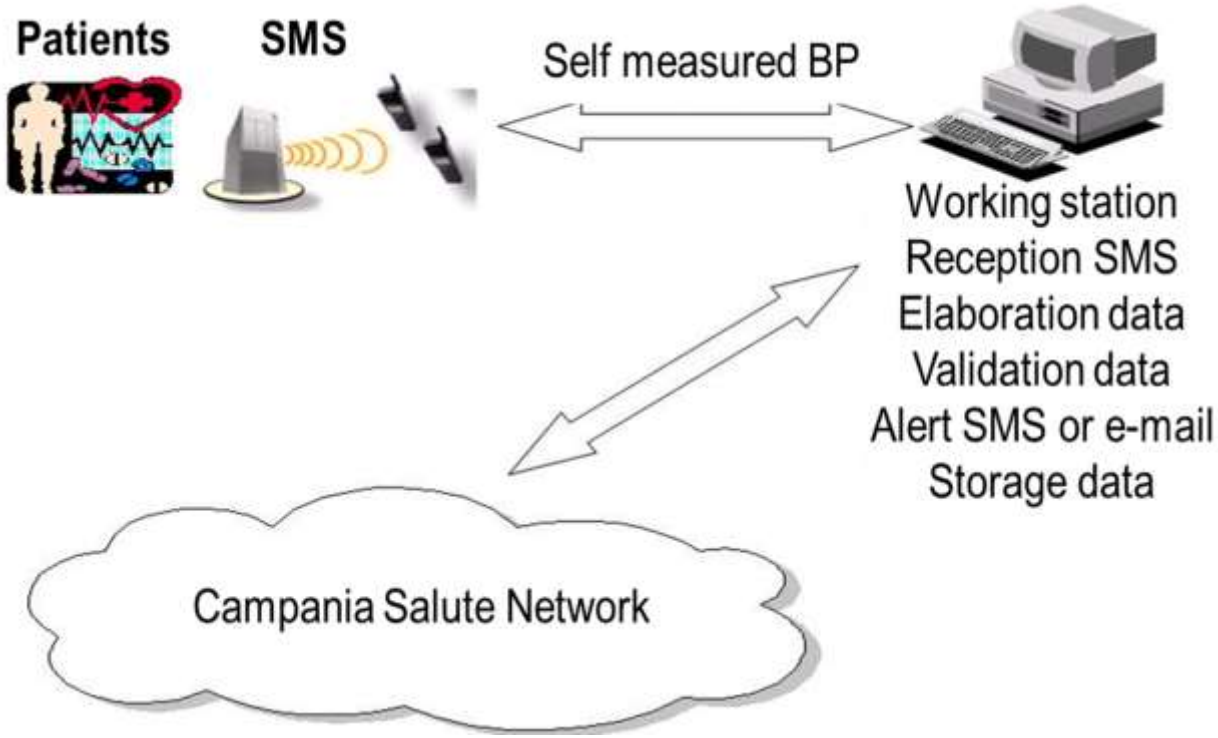
Il Network dell'Ipertensione

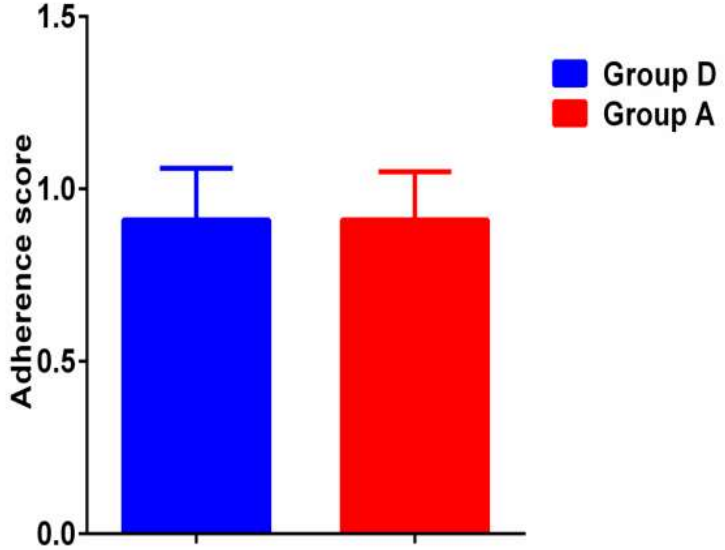


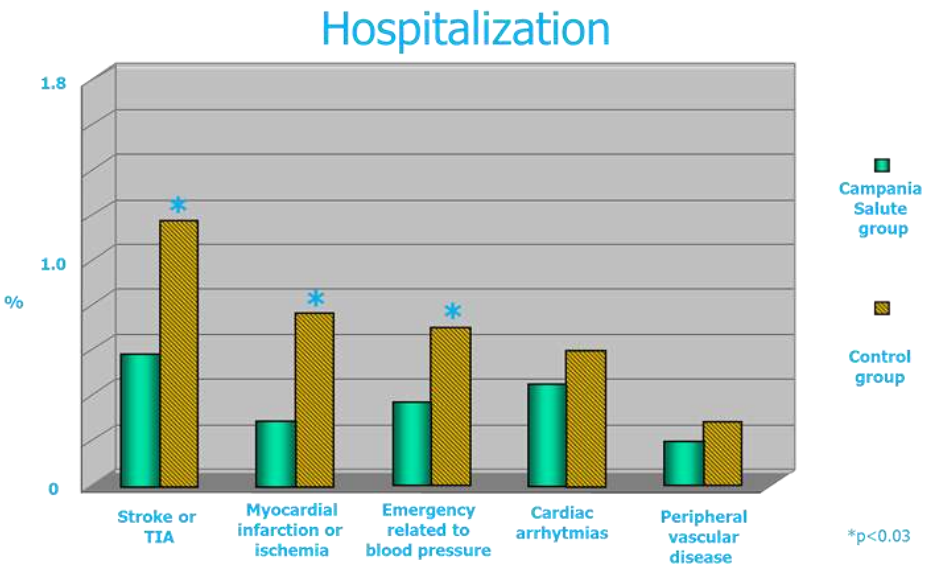
Campania Salute Network

CSN


Patients
SMS
Self measured BP
Working station
Reception SMS
Elaboration data
Validation data
Alert SMS or e-mail
Storage data
Campania Salute Network

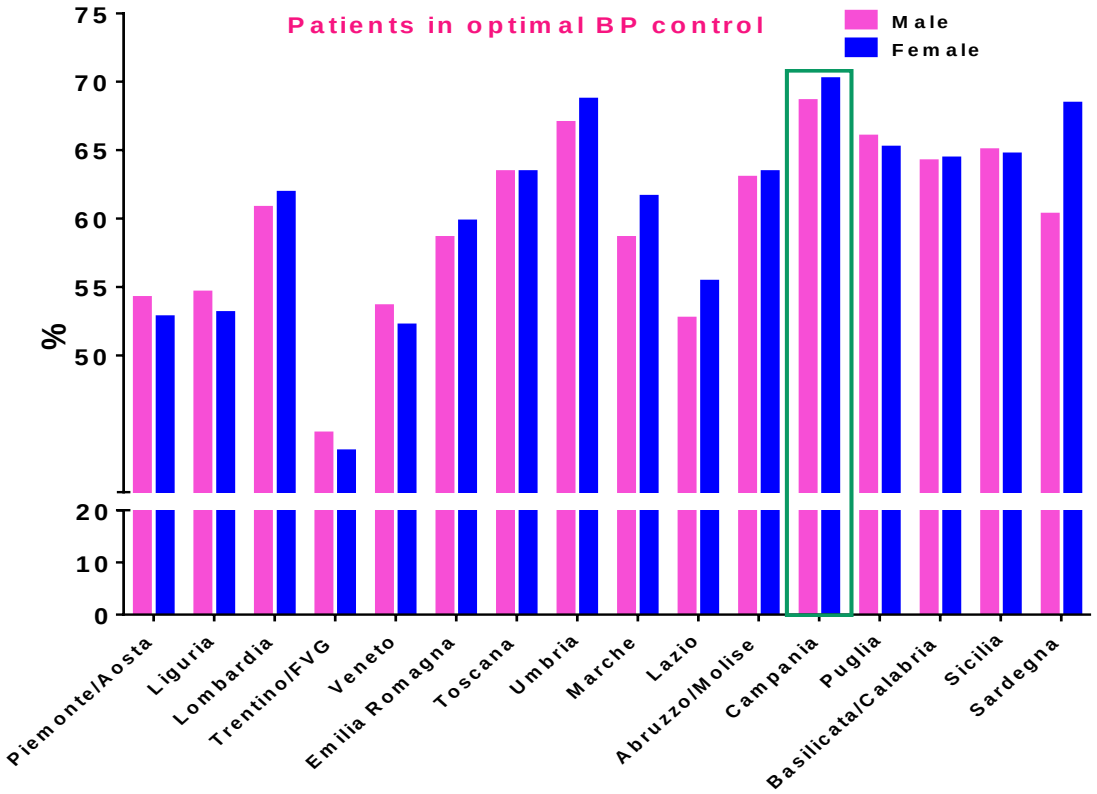
Persistenza ed Aderenza alla Terapia Antiipertensiva





Trimarco V, J Hypertension 2012

Controllo della Pressione Arteriosa in Italia



Tocci G, High Blood Press Cardiovasc Prev. 2016

WINCARE - Popolazione Selezionata: GLOBALE

Operazioni generali Paziente Servizi Funzioni di Gestione ?

Esci Nuovo Vista Eventi Smart Card Popolazioni Utility About Progetto AIFA Anagrafica Centrale

Ricerca per Cognome Condizione marino Cerca Avanzata Aggiorna

A/S	Centro	Codice	Cognome	Nome	Data di nascita	Ingresso In	Score
A	1	7809	MARINO	Giovanna	02/09/1949	Ipertensione	
A	1	107363	MARINO	Giovanni	28/07/1943	Esterno	
A	1	102709	MARINO	Giulia	17/11/1937	Cardiologia	
S	1	4170	MARINO	Giuliana	16/10/1954	Ipertensione	
A	1	10571	MARINO	Giuliana	12/01/1951	Normale	
A	100	837	MARINO	GIUSEPPE	18/01/1954	Cardiopatia Ischemica	
A	1	105106	MARINO	Giuseppina	01/04/1963	Esterno	
A	1	106315	MARINO	Ida	22/07/1959	Esterno	
A	100	1037	MARINO	Iolanda	09/08/1928	Cardiopatia Ischemica	
A	1	7373	MARINO	Italia	07/05/1934	Ipertensione	
A	1	3842	MARINO	Liliana	15/10/1942	Ipertensione	
A	1	39546	MARINO	Lorenzo	16/12/1952	Ipertensione	
A	100	634	MARINO	Lorenzo	05/04/1937	Cardiopatia Ischemica	
A	1	106875	MARINO	Lucia	02/12/1964	Ipertensione	
A	1	54249	MARINO	Luigi	13/09/1955	UTIC	
A	1	51370	MARINO	Luigi	01/04/1950	UTIC	
A	1	42473	MARINO	Maria	18/02/1939	Ipertensione	
A	1	10564	MARINO	Maria	05/06/1931	UTIC	
A	1	34650	MARINO	Maria	10/10/1950	Ipertensione	
S	1	31971	MARINO	Maria Luisa	19/07/1948	Ipertensione	
A	1	38000	MARINO	Maria Rosaria	09/12/1954	Ipertensione	
A	1	37188	MARINO	Maria Rosaria	13/01/1946	DH	
A	1	8197	MARINO	Maria Rosaria	14/09/1939	Ipertensione	
A	1	47903	MARINO	Maria Rosaria	10/06/1950	Ipertensione	
A	1	50432	MARINO	Maria Rosaria	24/09/1942	Ipertensione	
A	1	58720	MARINO	Massimiliano	26/01/1966	Ipertensione	
A	1	106329	MARINO	Massimo	13/08/1963	UTIC	
A	1	50069	MARINO	Mattia	23/05/2000	Esterno	
A	1	44709	MARINO	Maurizio	03/11/1974	Esterno	
A	1	104184	MARINO	Michele	30/09/1956	UTIC	
A	1	56255	MARINO	Nadia	12/05/1952	Nefrologia	
A	1	57510	MARINO	Natalino	07/07/1951	AOU GASTROENT	
A	1	44269	MARINO	Nicola	13/10/1963	Esterno	
A	1	41369	MARINO	Paolo	10/12/1993	Ipertensione	
A	1	50055	MARINO	Paolo	02/09/1951	Cardiologia	
A	1	31516	MARINO	Paolo	19/01/1949	Ipertensione	
A	1	31520	MARINO	Pasquale	27/02/1972	Esterno	
A	1	3376	MARINO	Patrizia	19/12/1952		
A	1	40313	MARINO	Patrizia	21/11/1950	Esterno	
A	1	44920	MARINO	Patrizia	14/02/1970	Ipertensione	
A	1	44804	MARINO	Pietro	06/05/1956	Ipertensione	
A	1	44045	MARINO	Pietro	24/01/1948	Esterno	
A	1	41248	MARINO	Rachele	08/11/1952	Esterno	
A	1	104051	MARINO	Raffaele	02/08/1976	Esterno	
A	1	53125	MARINO	Renata	24/10/1950	UTIC	
A	1	39540	MARINO	Rita	18/05/1963	Esterno	
A	1	105715	MARINO	Roberta	05/08/1968	Esterno	
S	1	31016	MARINO	Roberto	16/11/1952	Ipertensione	
A	1	39292	MARINO	Rocco	08/04/1969	DH	
A	1	57427	MARINO	Rosa	12/04/1959	Esterno	
A	1	40196	MARINO	Rosalba	02/04/1956	DH	
A	1	33008	MARINO	Rosaria	04/02/1944	Esterno	
A	1	54029	MARINO	Rubina	26/03/1945	Ipertensione	
A	1	39842	MARINO	Salvatore	05/07/1938	Ipertensione	
A	1	51340	MARINO	Sebastiano	14/03/1985	Ipertensione	
A	1	106439	MARINO	Serafina	13/03/1955	Ipertensione	
A	1	51287	MARINO	Sergio	17/02/1975	Ipertensione	
A	1	30175	MARINO	Sergio	15/10/1959	Ipertensione	
A	1	46394	MARINO	Stefania	25/08/1969	Esterno	
A	1	102916	MARINO	Tullio	26/04/1961	Esterno	
A	1	58722	MARINO	Vincenzo	20/01/1958	Ipertensione	

43100

Pazienti nella popolazione: 43100

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WINCARE - Popolazione Selezionata: IPERTENSIONE

Operazioni generali | Paziente | Servizi | Funzioni di Gestione | ?

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Ricerca per: Ingresso In | Condizione | Cerca | Avanzata | Aggiorna

A/S	Centro	Codice	Cognome	Nome	Data di nascita	Ingresso In	Score
A	1	3521	ABAGNALE	Giuseppe	22/02/1966	Ipertensione	
A	1	4429	ABALSAMO	Antonio	17/02/1955	Ipertensione	
A	1	8334	ABATE	Ambrogio	06/03/1955	Ipertensione	
A	1	2413	ABATE	Anna	07/03/1949	Ipertensione	
A	1	6574	ABATE	Carmela	19/10/1951	Ipertensione	
A	1	33054	ABATE	Carmine	27/01/1949	Ipertensione	
A	1	44808	ABATE	Ciro	29/07/1965	Ipertensione	
A	1	40397	ABATE	Domenico	15/12/1978	Ipertensione	
A	1	57871	ABATE	Gennaro	10/07/1963	Ipertensione	
A	1	43196	ABATE	Giuseppe	22/12/1941	Ipertensione	
A	1	6007	ABATE	Giuseppe	21/06/1954	Ipertensione	
A	1	811	ABATE	Giuseppe	02/04/1951	Ipertensione	
A	1	5630	ABATE	Lorenzo	02/07/1949	Ipertensione	
A	1	1179	ABATE	Luigi	19/03/1975	Ipertensione	
A	1	2678	ABATE	Pasquale	11/02/1934	Ipertensione	
A	1	7907	ABATE	Quirino	04/06/1951	Ipertensione	
A	1	35510	ABATE	Rosa	06/09/1942	Ipertensione	
A	1	911	ABATE	Speranza	25/06/1962	Ipertensione	
A	1	9870	ABATE	Vincenza	06/02/1959	Ipertensione	
A	1	106644	ABATECOLA	Adriana	31/07/1946	Ipertensione	
A	1	7502	ABATEGIOVANNI	Giovanna	11/10/1935	Ipertensione	
A	1	37212	ABAZIA	Elisabetta	23/03/1968	Ipertensione	
A	1	34273	ABBAGNALE	Umberto	08/05/1954	Ipertensione	
A	1	6405	ABBAGNANO	Antonio	11/06/1946	Ipertensione	
A	1	50108	ABBAGNANO	Liliana	11/08/1945	Ipertensione	
A	1	102278	ABBAGNATO	Carmela	22/05/1952	Ipertensione	
A	1	33988	ABBAMONDI	Dante	09/08/1957	Ipertensione	
A	1	3506	ABBATE	Bruno	26/11/1953	Ipertensione	
A	1	903	ABBATE	Carmela	16/07/1943	Ipertensione	
A	1	6209	ABBATE	Ciro	04/07/1945	Ipertensione	
A	1	42205	ABBATE	Concetta	14/11/1962	Ipertensione	
A	1	55520	ABBATE	Gennaro	14/04/1966	Ipertensione	
A	1	6197	ABBATE	Giuseppe	17/09/1950	Ipertensione	
A	1	8137	ABBATE	Lorenza	19/04/1971	Ipertensione	
A	1	34750	ABBATE	Maria	16/04/1949	Ipertensione	
A	1	6173	ABBATE	Mario	17/09/1956	Ipertensione	
A	1	46372	ABBATE	Renato	01/06/1939	Ipertensione	
A	1	33449	ABBATE	Salvatore	12/04/1955	Ipertensione	
A	1	30942	ABBATI	Antonio	07/09/1944	Ipertensione	
A	1	34091	ABBENANTE	Anna	01/07/1945	Ipertensione	
A	1	49701	ABBENANTE	Umberto	16/11/1951	Ipertensione	
A	1	5460	ABBIUSO	Primiano	29/05/1965	Ipertensione	
A	1	42092	ABBONDANTE	Vincenzo	22/01/1947	Ipertensione	
A	1	7874	ABBRUZZESE	Francesca	20/07/1937	Ipertensione	
A	1	46663	ABEILLE	Amalia	27/08/1949	Ipertensione	
A	1	9136	ABENANDI	Angelina	13/09/1938	Ipertensione	
A	1	33108	ABRAMO	Libera	01/08/1962	Ipertensione	
A	1	50858	ABRATE	Massimo	14/01/1966	Ipertensione	
A	1	6685	ABRUZZESE	Carmine	08/09/1952	Ipertensione	
A	1	8041	ABRUZZESE	Giovanna	10/04/1951	Ipertensione	
A	1	7885	ABRUZZESE	Nunzia	01/06/1954	Ipertensione	
A	1	44740	ACAMPA	Sergio	09/01/1966	Ipertensione	
A	1	48223	ACAMPA	Wanda	19/05/1932	Ipertensione	
A	1	39911	ACAMPORA	Angelina	14/05/1949	Ipertensione	
A	1	1196	ACAMPORA	Anna	09/02/1948	Ipertensione	
A	1	39910	ACAMPORA	Anna Maria	06/06/1947	Ipertensione	
A	1	127	ACAMPORA	Emanuele	28/06/1973	Ipertensione	
A	1	3635	ACAMPORA	Raimondo	11/02/1948	Ipertensione	
A	1	7266	ACANFORA	Annunziata	25/06/1946	Ipertensione	
A	1	41218	ACANFORA	Bernardo	21/01/1943	Ipertensione	
A	1	9939	ACANFORA	Carmela	04/01/1956	Ipertensione	

Pazienti nella popolazione: 15990

15990

Query n.1 di 1

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WINCARE - Popolazione Selezionata: UTIC

Operazioni generali Paziente Servizi Funzioni di Gestione ?

Esci Nuovo Vista Eventi Smart Card Popolazioni Utility About Prodotto AIFA Anagrafica Centrale

Ricerca per Ingresso In Condizione Cerca Avanzata Aggiorna

A/S	Centro	Codice	Cognome	Nome	Data di nascita	Ingresso In	Score
A	1	58509	ABAGNALE	Roberto	16/09/1963	UTIC	
A	1	31209	ABATE	Andrea	16/10/1958	UTIC	
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A	1	36403	ABATE	Carmela	27/01/1925	UTIC	
A	1	44311	ABATE	Nicola	09/03/1953	UTIC	
A	1	31923	ABATE	Vincenzo	23/09/1961	UTIC	
A	1	107663	ABBAMONDI	Alessandra	30/05/1994	UTIC	
A	1	42334	ABBATE	Brigida	11/04/1940	UTIC	
A	1	42818	ABBATI	Antonio	14/06/1945	UTIC	
A	1	105964	ABBATINO	Gennaro	12/06/1962	UTIC	
A	1	32478	ABBRECCIA	Luigi	27/03/1949	UTIC	
A	1	38991	ABBRUNZO	Alfonso	05/01/1931	UTIC	
A	1	35170	ABBRUZZESE	Renato	31/03/1937	UTIC	
A	1	58579	ABILITATO	Ciro	05/11/1948	UTIC	
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A	1	106373	ACAMPORA	Salvatore	06/05/1942	UTIC	
A	1	42766	ACAMPORA	Vincenzo	16/12/1945	UTIC	
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A	1	37100	ACUNZO	Gennaro	20/07/1950	UTIC	
A	1	31571	ACUNZO	Pasquale	07/06/1944	UTIC	
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A	1	53903	ADAMI	Enrico	02/06/1963	UTIC	
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A	1	44708	ADDEVICO	Antonio	30/11/1946	UTIC	
A	1	10231	ADEL FADUL	Mohammed	14/11/1956	UTIC	
A	1	105539	ADINI	Gennaro	18/09/1957	UTIC	
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A	1	107415	AFELTRA	Giovanni	17/04/1956	UTIC	
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A	1	35168	AFFINITO	Bartolomeo	06/06/1940	UTIC	
A	1	108343	AFFINITO	Benito	12/04/1962	UTIC	
A	1	48797	AFFINITO	Salvatore	09/04/1960	UTIC	
A	1	50618	AFRATELLANZA	Rosa	10/08/1935	UTIC	
A	1	43315	AGATA	Simona	27/11/1949	UTIC	
A	1	36293	AGLIATA	Biagio	29/04/1947	UTIC	
A	1	59028	AGNETTI	Paolo	08/01/1950	UTIC	
A	1	31860	AGORINI	Emilio	25/10/1963	UTIC	
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A	1	32338	AGRESTI	Aldo Francesco	27/05/1926	UTIC	
A	1	10073	AGRESTI	Vincenzo	09/12/1927	UTIC	
A	1	50758	AGRILLO	Luigi	22/04/1954	UTIC	
A	1	52425	AHMAD	Khaled	05/02/1964	UTIC	
A	1	105966	AIELLO	Antonio	08/01/1964	UTIC	

Pazienti nella popolazione: 7000

7000

Risultati Query

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Risk of AF in General Population

- Hypertension is the most important risk factor for new AF
  - Population-attributable risk
    - 14-22%

Benjamin EJ, JAMA 1994; Psaty BM, Circulation 1997

Atrial Fibrillation (AF) Risk Factors

Established Risk Factors	Estimated Increased Risk	Comments
Age	2	Per decade
Male Sex	1.5	
Hypertension	1.2-1.5	BP>140/90 mmHg
Valvular heart disease	1.8-3.4	
LV systolic dysfunction	4.5-5.9	
Obesity	1.4-2.4	
Alcohol consumption	1.3-1.5	Heavy alcohol use (>36 g/d)

Andrade J, Circ Res 2014

Risk of AF in Hypertensives

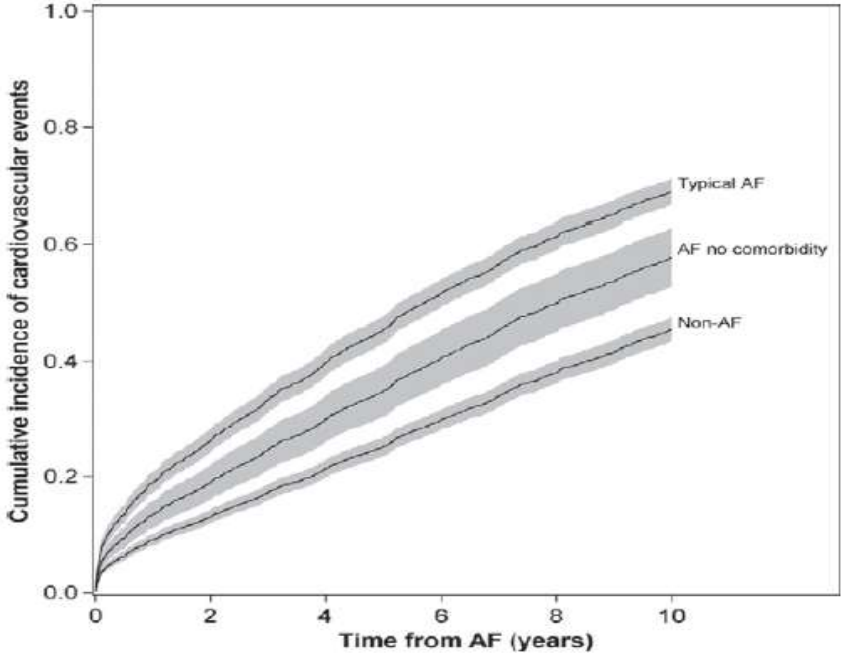
- Role of Systolic Blood Pressure (BP) at baseline:
  - Higher in patients who develop AF
    - Registries
      - Untreated patients

Verdecchia P, Hypertension 2003

      - Treated patients

Losi MA, Int J Cardiol 2015

AF with and without Comorbities



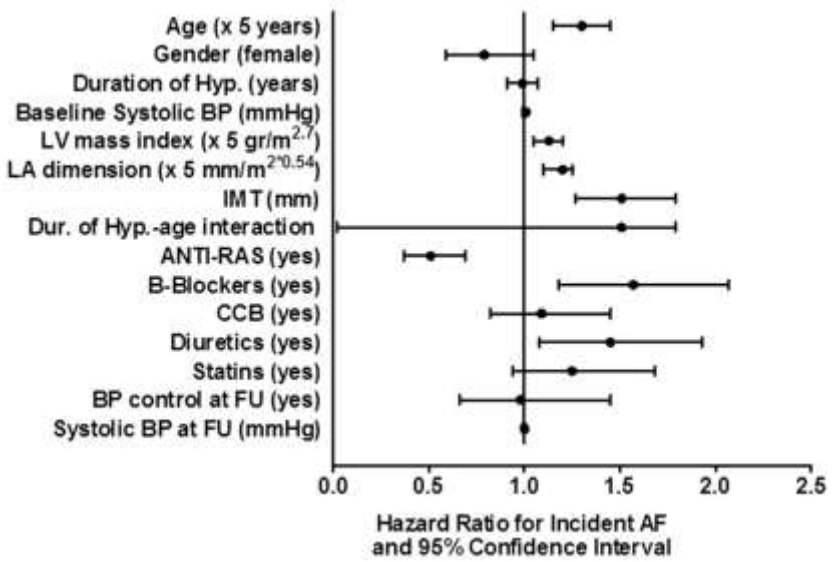
Kim EJ, Am Heart J 2016

Risk of AF in Hypertensives
Systolic BP at baseline

TABLE 2. Independent Predictors of Atrial Fibrillation*

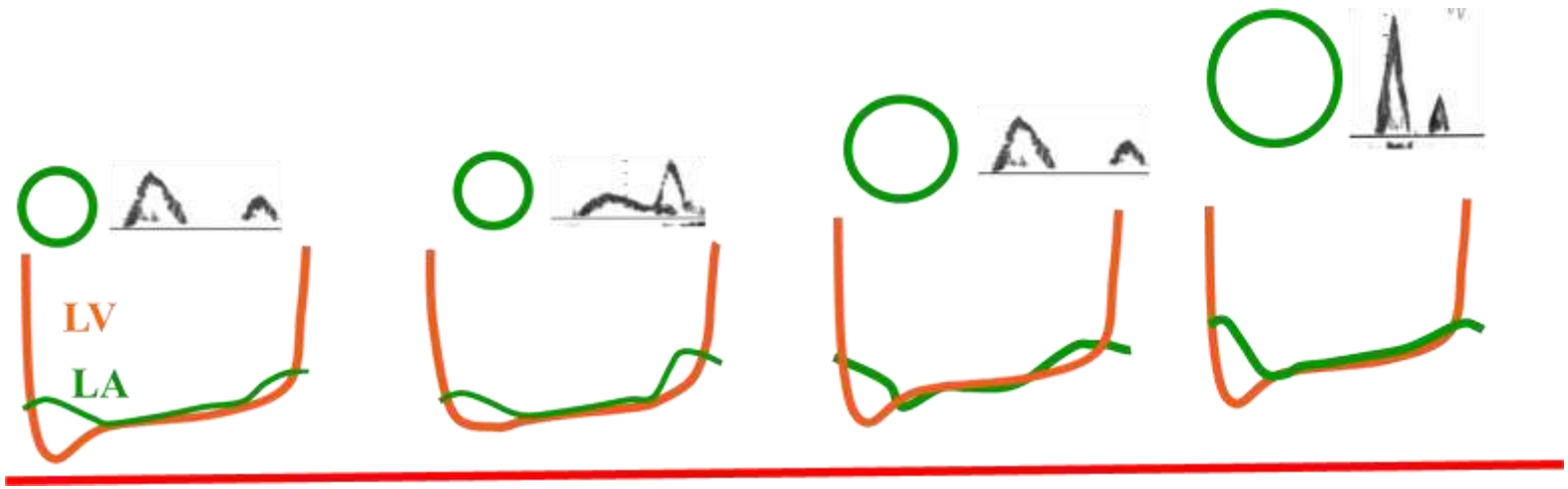
Variable	Comparison	Relative Risk (95% Confidence Intervals)	*P*
Acute atrial fibrillation			
Age	10 years	1.75 (1.36–2.26)	0.001
LV mass	1 SD (14 g/height$^{2.7}$)	1.20 (1.07–1.34)	0.001
Chronic atrial fibrillation			
Age	10 years	2.86 (1.72–4.76)	0.001
LV mass	1 SD (14 g/height$^{2.7}$)	1.70 (1.19–2.43)	0.003
Left atrial diameter	1 SD (0.57 cm)	2.08 (1.31–3.31)	0.002

Verdecchia P, Hypertension 2003

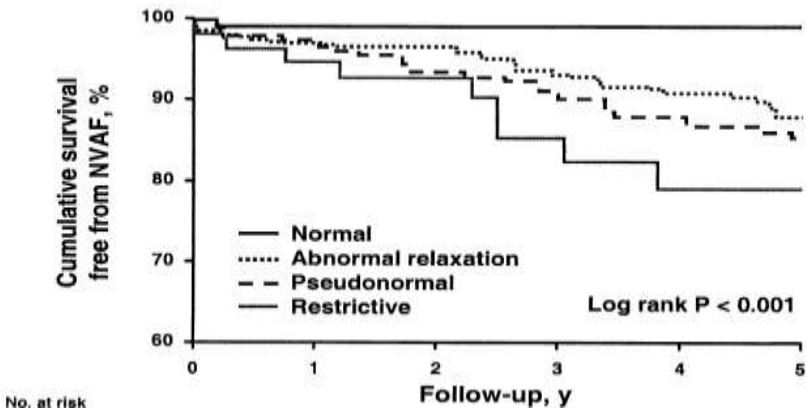


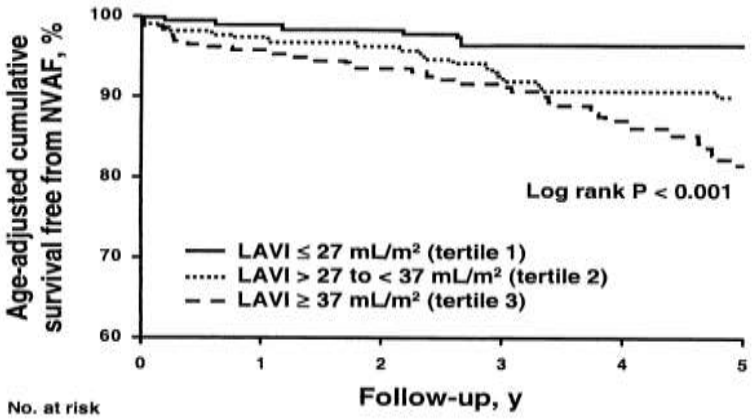
Losi MA, Int J Cardiol 2015

Left Atrial Size and Diastolic Dysfunction



Doppler «diastolic dysfucntion» and AF

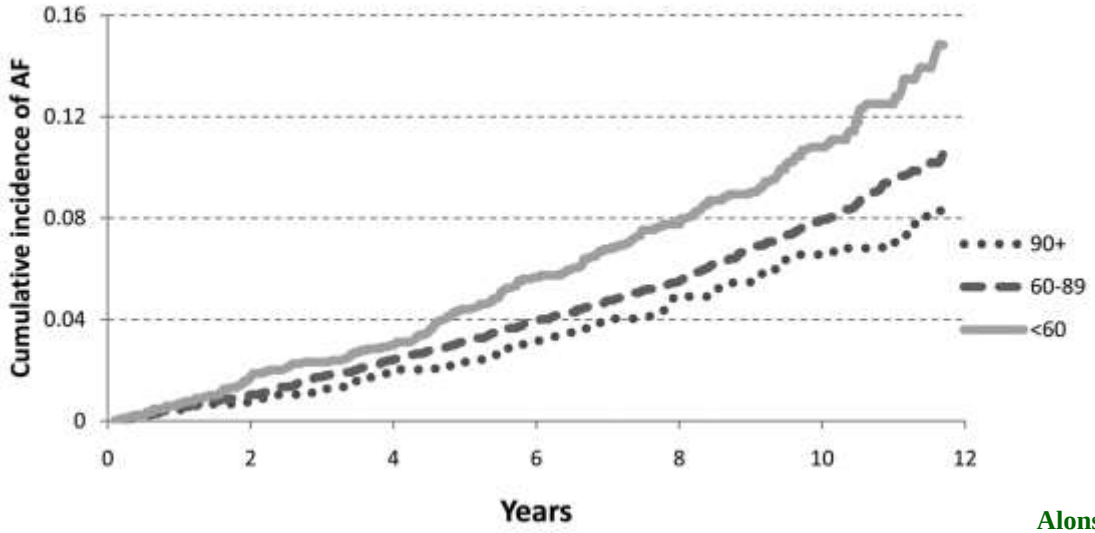




Tsang TSM, J Am Coll Cardiol 2002

AF and Renal Function in General Population

- AF increases with severity of renal dysfunction



Alonso A, Circulation 2011

Renal Function and Incident AF in Hypertensives

TABLE 1. Baseline Characteristics of Patients With and Without Future Occurrence of Atrial Fibrillation

Variable	Total Population (N=2482)	Future Occurrence of Atrial Fibrillation: No (n=2421)	Future Occurrence of Atrial Fibrillation: Yes (n=61)
Creatinine, mmol/L	87.1 (21.8)	87.1 (22)	90.3 (25)

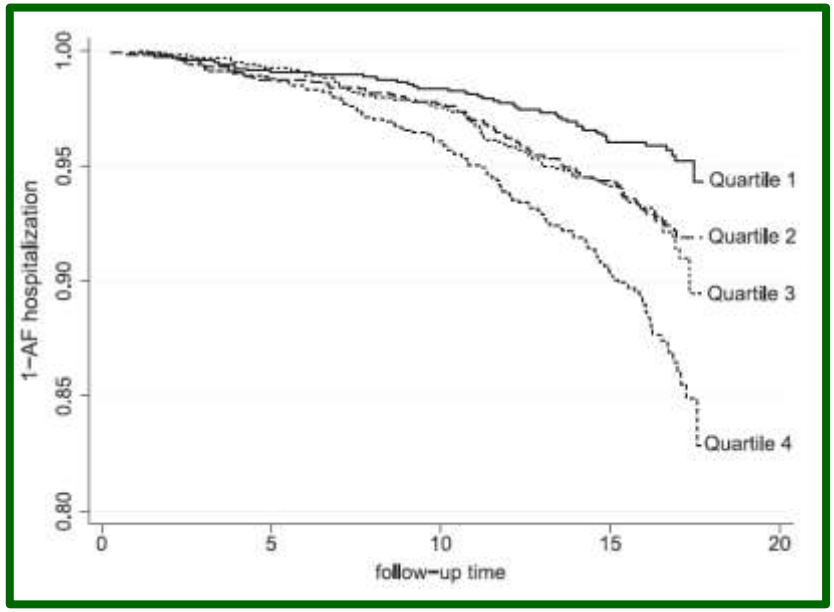
Verdecchia P, Hypertension 2003

Table 1
Baseline characteristics of the studied population.

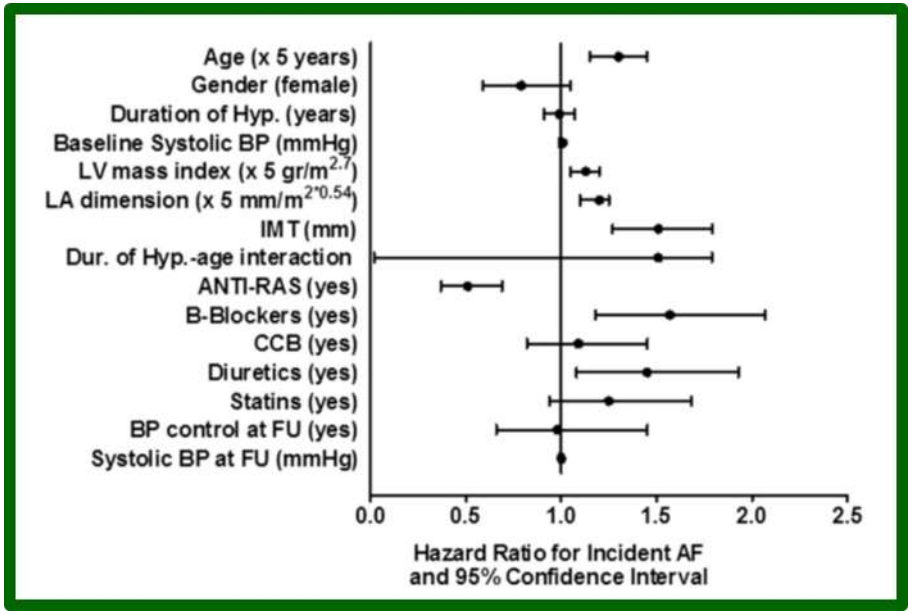
Parameter	No AF group 6945	AF group 117	p
GFR by simplified MDRD (ml/min/1.73 m^2)	79 ± 18	77 ± 21	NS

Losi MA, Int J Cardiol 2015

Carotid Intimal Medial Thickness and Incident AF



Eryd SA, Atherosclerosis 2013

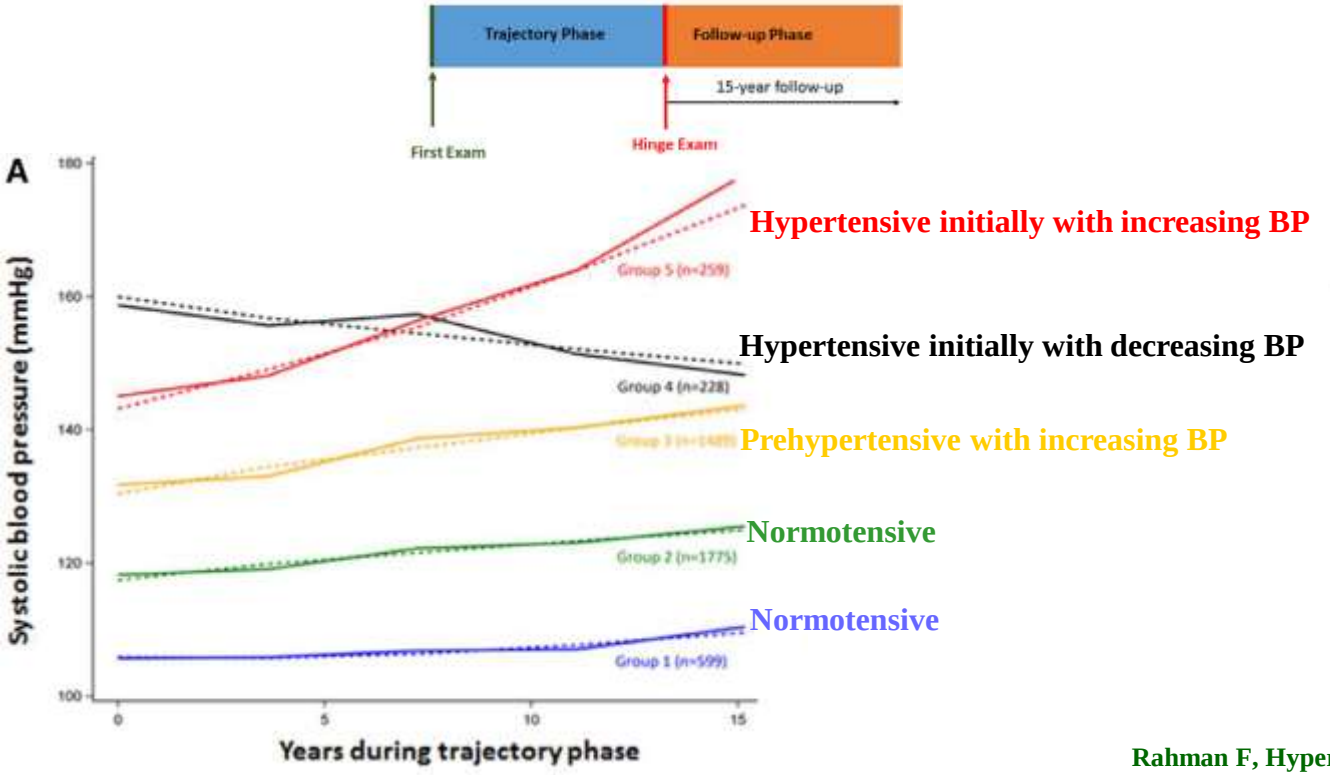


Losi MA, Int J Cardiol 2015

Characteristics during follow-up and risk of AF

- Changes in
  - Systolic BP
  - LV hypertrophy
  - LA size
  - Renal Function

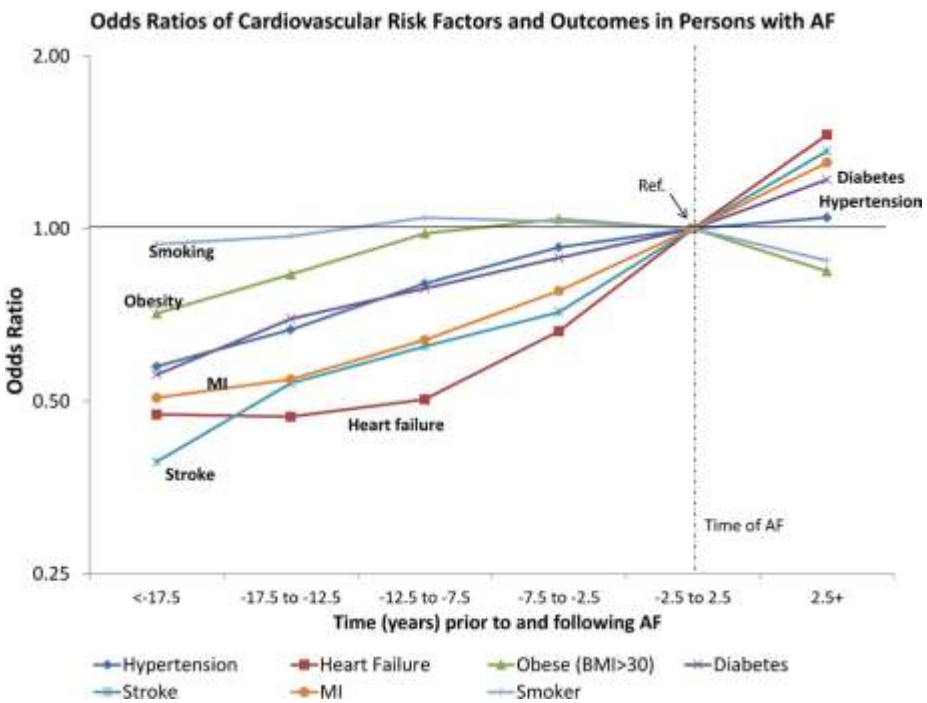
SBP during Follow-up and AF

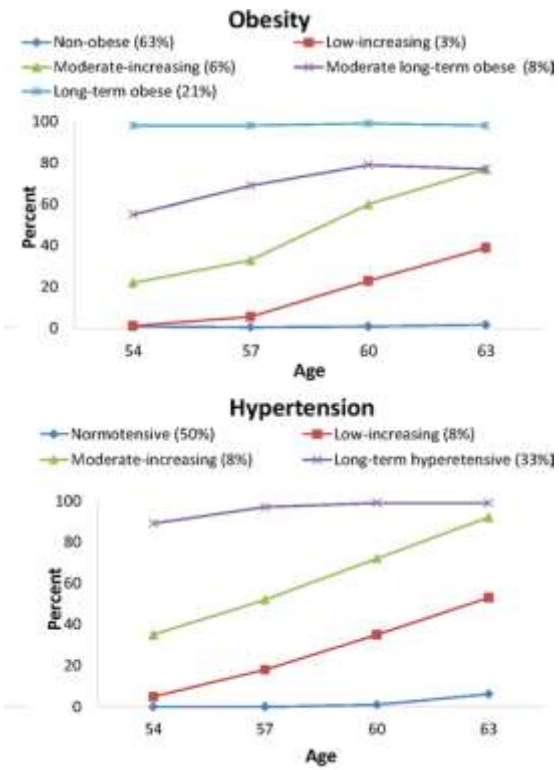


Increased Risk for Incident AF

Rahman F, Hypertension 2016

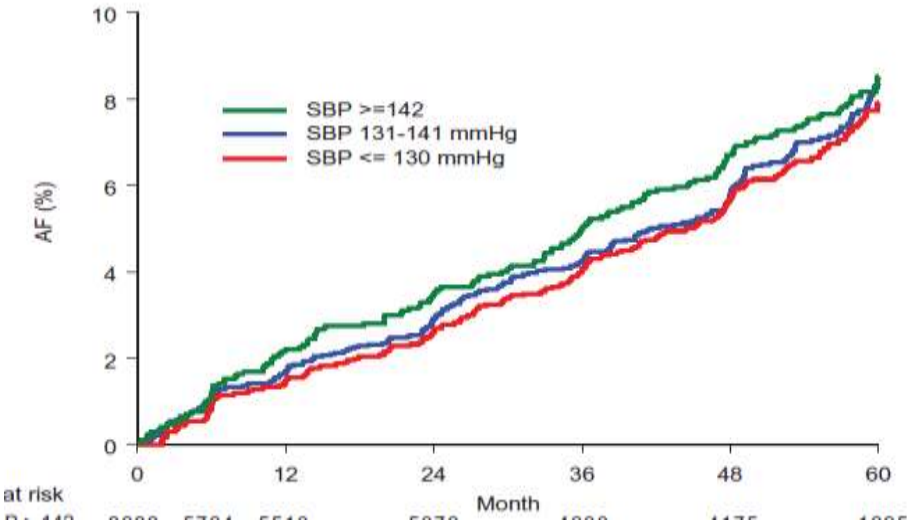
SBP during Follow-up and AF





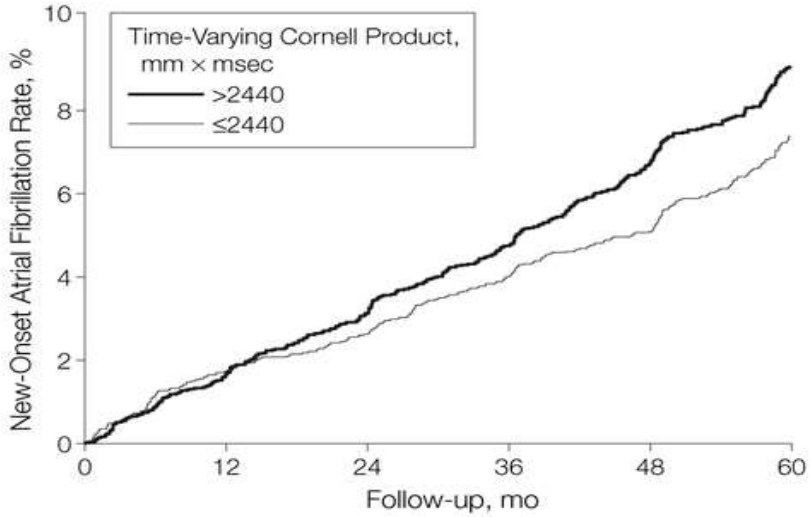
Norby FL, Circulation 2016

SBP during Follow-up and AF

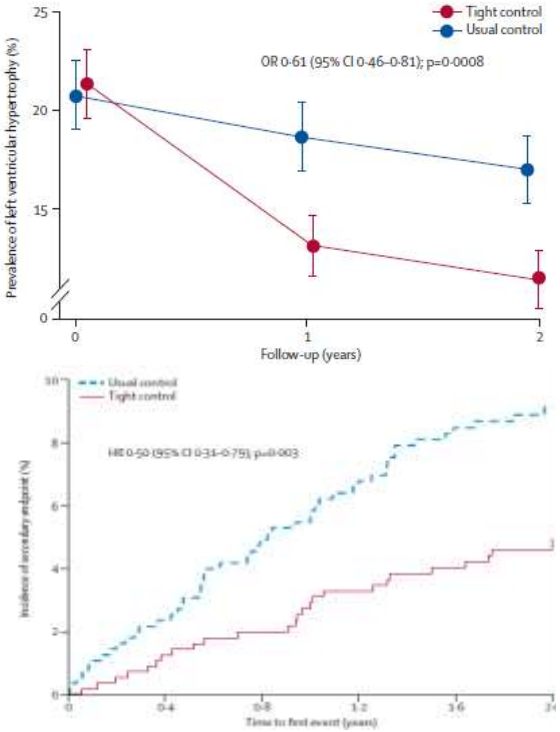


Okin PM, Hypertension 2015

LVM during Follow-up and AF

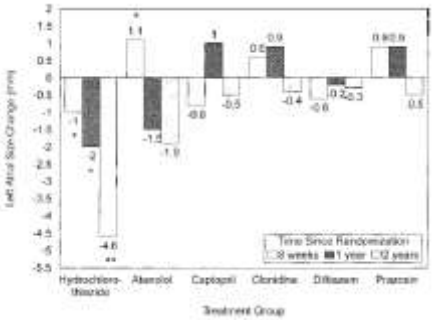


Okin PM, JAMA 2006

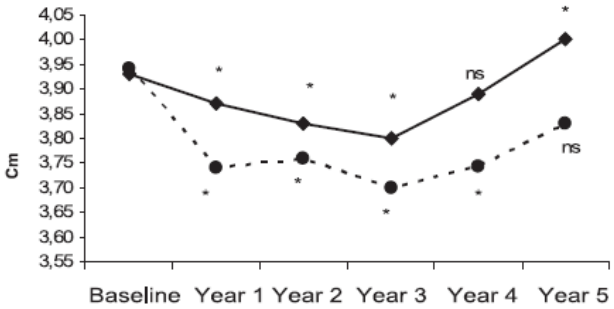


Verdecchia P, Lancet 2009

LA Size During Follow-up

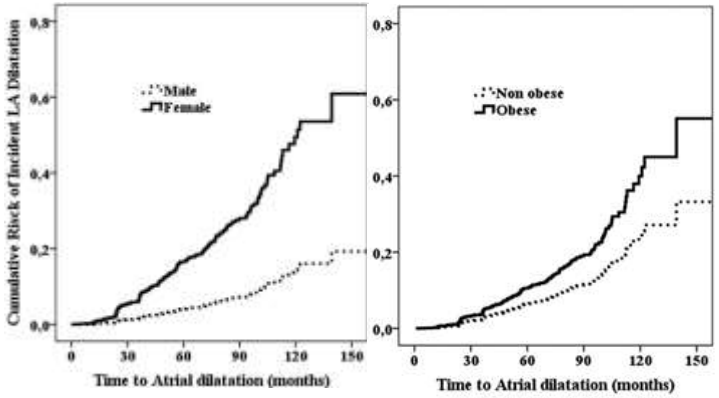


Gottdiener JS, Circulation 1998



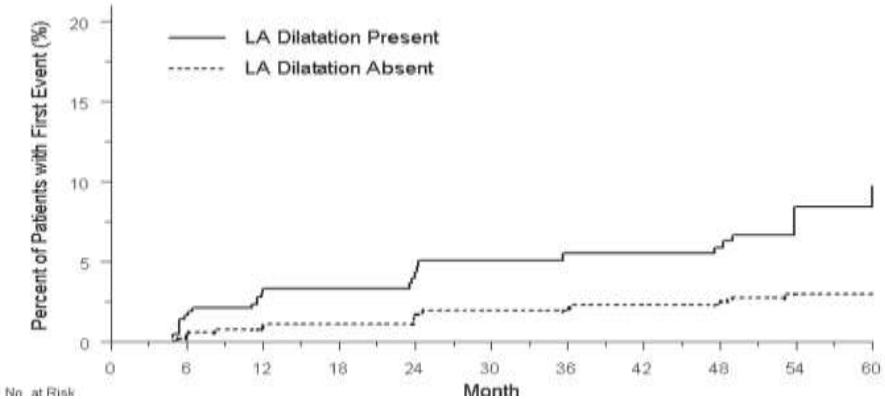
Gerdts E, Hypertension 2007

Left atrium dilates in 12% of hypertensive treated patients



Losi MA, Am J Hypert 2016

LA Size during follow-up and AF



Wachtell K, Blood Pressure 2010

Worsening Renal Function & AF

- We can hypothesize that
  - Development of worsening renal function contributes to a greater incidence of LV hypertrophy and LA dilatation
  - The development of AF should negatively affect kidney function
    - AF abolishes the contribution of atrial contraction to ventricular filling
      - Reduction of cardiac output

Conclusions

- Hypertension and AF are strictly linked
  - At baseline predictors of incident AF:
    - Target organ damage
    - LA size
  - During follow-up the rate of AF is reduced by
    - Lower value of Systolic BP
    - LV hypertrophy and LA dilation regression

Atrial fibrillation and cognitive decline

A longitudinal cohort study

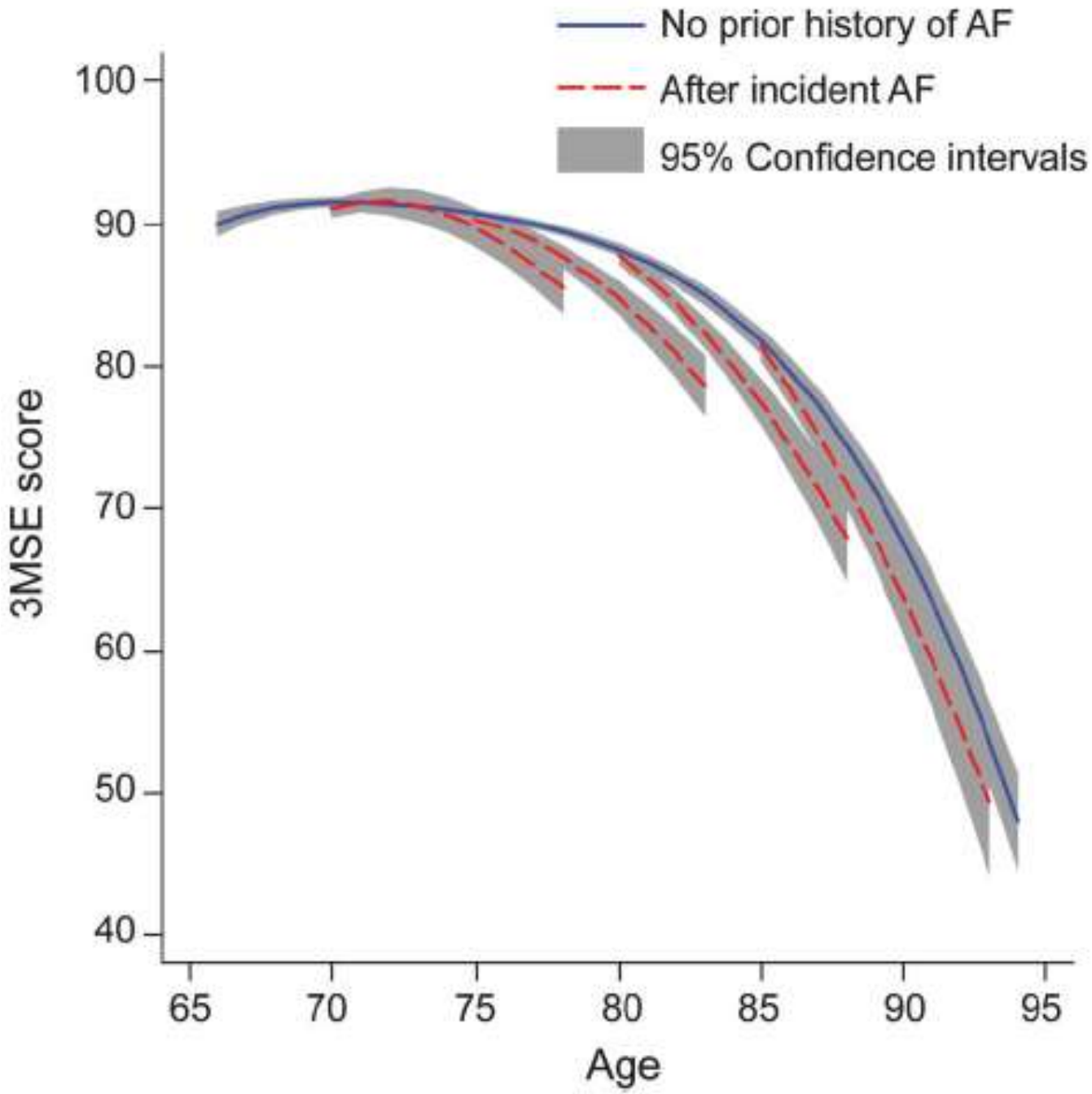
ABSTRACT

Objective: We sought to determine whether in the absence of clinical stroke, people with atrial fibrillation experience faster cognitive decline than people without atrial fibrillation.

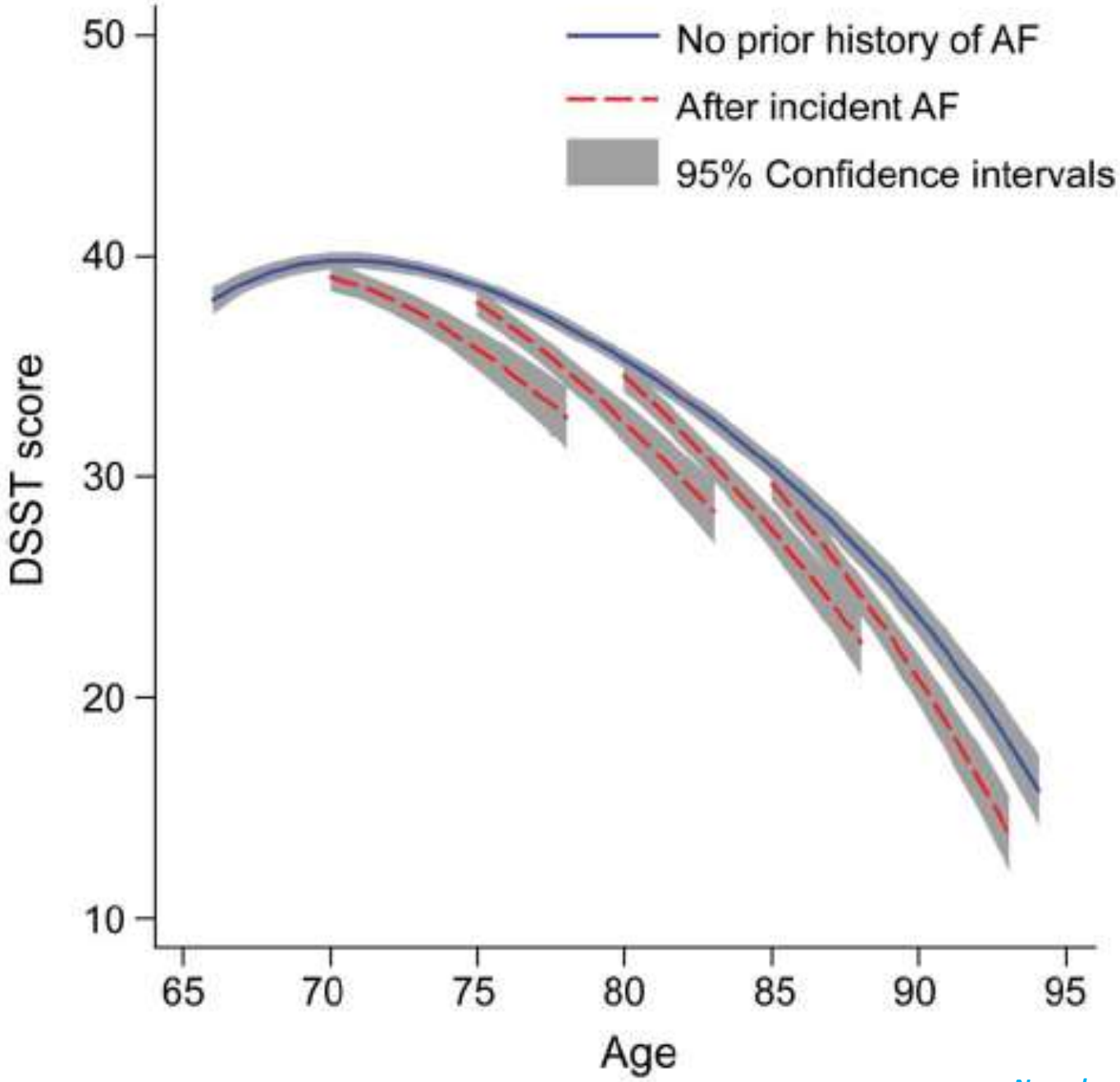
Methods: We conducted a longitudinal analysis in the Cardiovascular Health Study, a community-based study of 5,888 men and women aged 65 years and older, enrolled in 1989/1990 or 1992/1993. Participants did not have atrial fibrillation or a history of stroke at baseline. Participants were censored when they experienced incident clinical stroke. Incident atrial fibrillation was identified by hospital discharge diagnosis codes and annual study ECGs. The main outcome was rate of decline in mean scores on the 100-point Modified Mini-Mental State Examination (3MSE), administered annually up to 9 times.

Results: Analyses included 5,150 participants, of whom 552 (10.7%) developed incident atrial fibrillation during a mean of 7 years of follow-up. Mean 3MSE scores declined faster after incident atrial fibrillation compared with no prior atrial fibrillation. For example, the predicted 5-year decline in mean 3MSE score from age 80 to age 85 was −6.4 points (95% confidence interval [CI]: −7.0, −5.9) for participants without a history of atrial fibrillation, but was −10.3 points (95% CI: −11.8, −8.9) for participants experiencing incident atrial fibrillation at age 80, a 5-year difference of −3.9 points (95% CI: −5.3, −2.5).

Conclusions: In the absence of clinical stroke, people with incident atrial fibrillation are likely to reach thresholds of cognitive impairment or dementia at earlier ages than people with no history of atrial fibrillation. *Neurology*® 2013;81:119–125



Neurology 2013;81:119–125



Neurology 2013;81:119–125

REVIEW | Annals of Internal Medicine

Cognitive Impairment Associated With Atrial Fibrillation

A Meta-analysis

Shadi Kalantarian, MD, MPH; Theodore A. Stern, MD; Moussa Mansour, MD; and Jeremy N. Ruskin, MD

Background: Atrial fibrillation (AF) has been linked with an increased risk for cognitive impairment and dementia.

Purpose: To complete a meta-analysis of studies examining the association between AF and cognitive impairment.

Data Sources: Search of MEDLINE, PsycINFO, Cochrane Library, CINAHL, and EMBASE databases and hand search of article references.

Study Selection: Prospective and nonprospective studies reporting adjusted risk estimates for the association between AF and cognitive impairment.

Data Extraction: Two abstracters independently extracted data on study characteristics, risk estimates, methods of AF and outcome ascertainment, and methodological quality.

Data Synthesis: Twenty-one studies were included in the meta-analysis. Atrial fibrillation was significantly associated with a higher risk for cognitive impairment in patients with first-ever or recurrent stroke (relative risk [RR], 2.70 [95% CI, 1.82 to 4.00]) and in a broader population including patients with or without a history of stroke (RR, 1.40 [CI, 1.19 to 1.64]). The association in the latter group remained significant independent proof of clinical stroke history (RR, 1.34 [CI, 1.13 to 1.58]). However, there was significant heterogeneity among studies of the broader population (I^2 = 69.4%). Limiting the analysis to prospective studies yielded similar results (RR, 1.36 [CI, 1.12 to 1.65]). Restricting the analysis to studies of dementia eliminated the significant heterogeneity (P = 0.137) but did not alter the pooled estimate substantially (RR, 1.38 [CI, 1.22 to 1.56]).

Limitations: There is an inherent bias because of confounding variables in observational studies. There was significant heterogeneity among included studies.

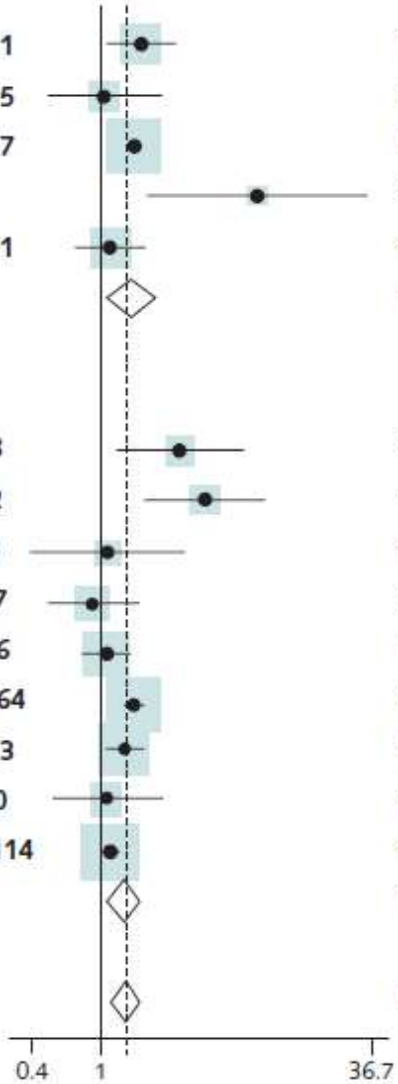
Conclusion: Evidence suggests that AF is associated with a higher risk for cognitive impairment and dementia, with or without a history of clinical stroke. Further studies are required to elucidate the association between AF and subtypes of dementia as well as the cause of cognitive impairment.

Primary Funding Source: Deane Institute for Integrative Research in Atrial Fibrillation and Stroke at the Massachusetts General Hospital.

Ann Intern Med. 2013;158:338-346. www.annals.org
For author affiliations, see end of text.

The association between AF and cognitive impairment in patients with or without history of stroke

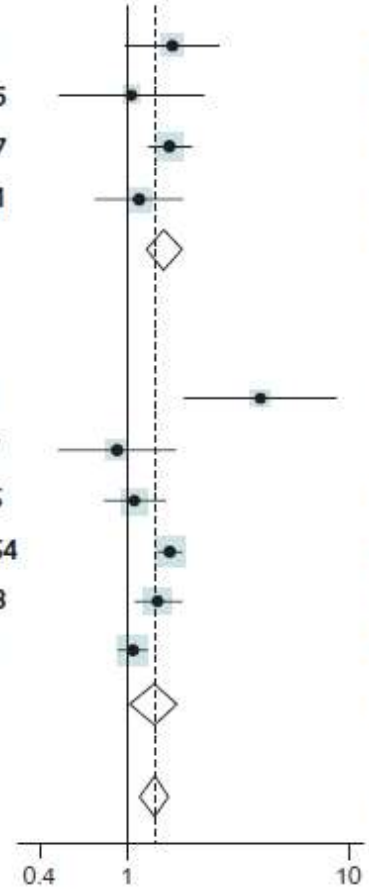
Study, Year (Reference)	End Point	AF Events/ Patients, *n/N*	No AF Events/ Patients, *n/N*	Relative Risk (95% CI)	Weight, %*	CVA Exclusion
Cross-sectional						
Ott et al, 1997 (28)	Cognitive impairment	38/157	597/6151	1.70 (1.10–2.63)	7.18	No†
Cacciatore et al, 1998 (29)	Cognitive impairment	20/60	227/1015	1.05 (0.50–2.20)	3.51	Yes
Jozwiak et al, 2006 (30)	Cognitive impairment	293/547	614/1467	1.56 (1.27–1.92)	12.50	Yes‡
Debette et al, 2007 (31)	Cognitive impairment	15/32	11/51	8.10 (1.90–34.53)	1.10	No
Bilato et al, 2009 (32)	Cognitive impairment	73/135	519/1441	1.14 (0.73–1.78)	6.99	No
Subtotal (I^2 = 49.9%; P = 0.092)				1.51 (1.11–2.05)	31.29	
Prospective cohort						
Tilvis et al, 2004 (33)	Cognitive decline	NR/61	NR/568	2.88 (1.26–6.58)	2.96	No
Elias et al, 2006 (13)	Cognitive impairment	NR/59	NR/952	4.01 (1.84–8.74)	3.25	Yes
Forti et al, 2007 (34)	Conversion to dementia§	0/13	36/418	1.10 (0.40–3.02)	2.11	No
Marengoni et al, 2011 (14)	Dementia	18/68	152/617	0.90 (0.50–1.62)	4.95	Yes
Peters et al, 2009 (16)	Cognitive decline	NR/190	NR/3146	1.08 (0.80–1.46)	10.02	No
Bunch et al, 2010 (11)	Dementia	731/10 161	804/26 864	1.56 (1.40–1.74)	14.77	No
Dublin et al, 2011 (12)	Dementia	103/502	469/2543	1.38 (1.10–1.73)	11.95	Yes
Li et al, 2011 (35)	Conversion to dementia¶	16/30	282/620	1.09 (0.54–2.20)	3.81	No
Marzona et al, 2012 (36)	Cognitive decline	526/2732	4169/25 114	1.14 (1.03–1.26)	14.90	No†
Subtotal (I^2 = 75.2%; P = 0.000)				1.36 (1.12–1.65)	68.71	
Overall (I^2 = 69.4%; P = 0.000)				1.40 (1.19–1.64)	100	



Ann Intern Med. 2013;158:338-346

The association between AF and cognitive impairment independent of stroke history

Study, Year (Reference)	End Point	AF Events/ Patients, *n/N*	No AF Events/ Patients, *n/N*	Relative Risk (95% CI)	Weight, %*	CVA Exclusion
Cross-sectional						
Ott et al, 1997 (28)	Cognitive impairment	NR/NR	NR/NR	1.60 (1.00–2.56)	7.49	Yes†
Cacciatore et al, 1998 (29)	Cognitive impairment	20/60	227/1015	1.05 (0.50–2.20)	4.03	Yes
Jozwiak et al, 2006 (30)	Cognitive impairment	293/547	614/1467	1.56 (1.27–1.92)	14.01	Yes‡
Bilato et al, 2009 (32)	Cognitive impairment	73/135	519/1441	1.14 (0.73–1.78)	7.95	No
Subtotal (I^2 = 0.0%; P = 0.478)				1.47 (1.24–1.74)	33.48	
Prospective cohort						
Elias et al, 2006 (13)	Cognitive impairment	NR/59	NR/952	4.01 (1.84–8.74)	3.74	Yes
Marengoni et al, 2011 (14)	Dementia	18/68	152/617	0.90 (0.50–1.62)	5.66	Yes
Peters et al, 2009 (16)	Cognitive impairment	NR/190	NR/3146	1.08 (0.80–1.46)	11.30	No
Bunch et al, 2010 (11)	Dementia	731/10 161	804/26 864	1.56 (1.40–1.74)	16.46	No
Dublin et al, 2011 (12)	Dementia	103/502	469/2543	1.38 (1.10–1.73)	13.41	Yes
Marzona et al, 2012 (36)	Cognitive impairment	NR/NR	NR/NR	1.06 (0.93–1.21)	15.96	Yes†
Subtotal (I^2 = 84.0%; P = 0.000)				1.32 (1.04–1.67)	66.52	
Overall (I^2 = 74.2%; P = 0.000)				1.34 (1.13–1.58)	100	



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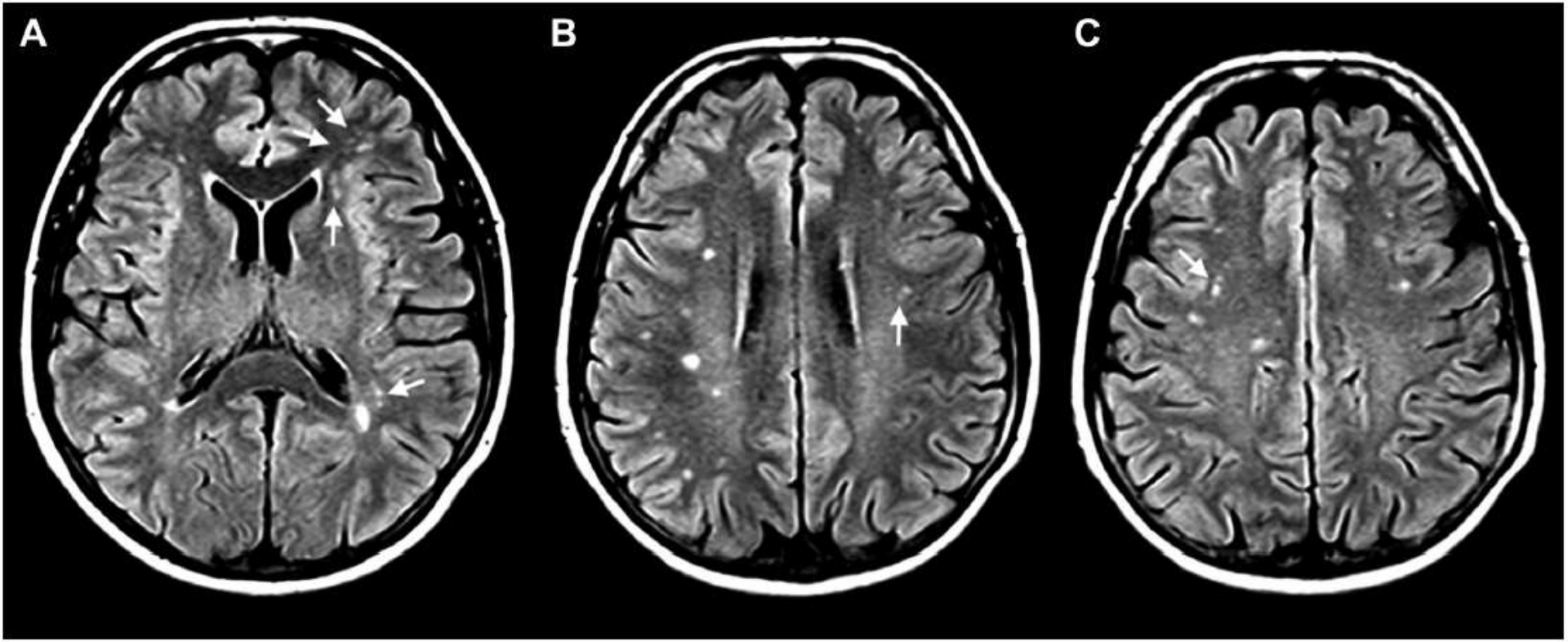
Heart Rhythm Disorders

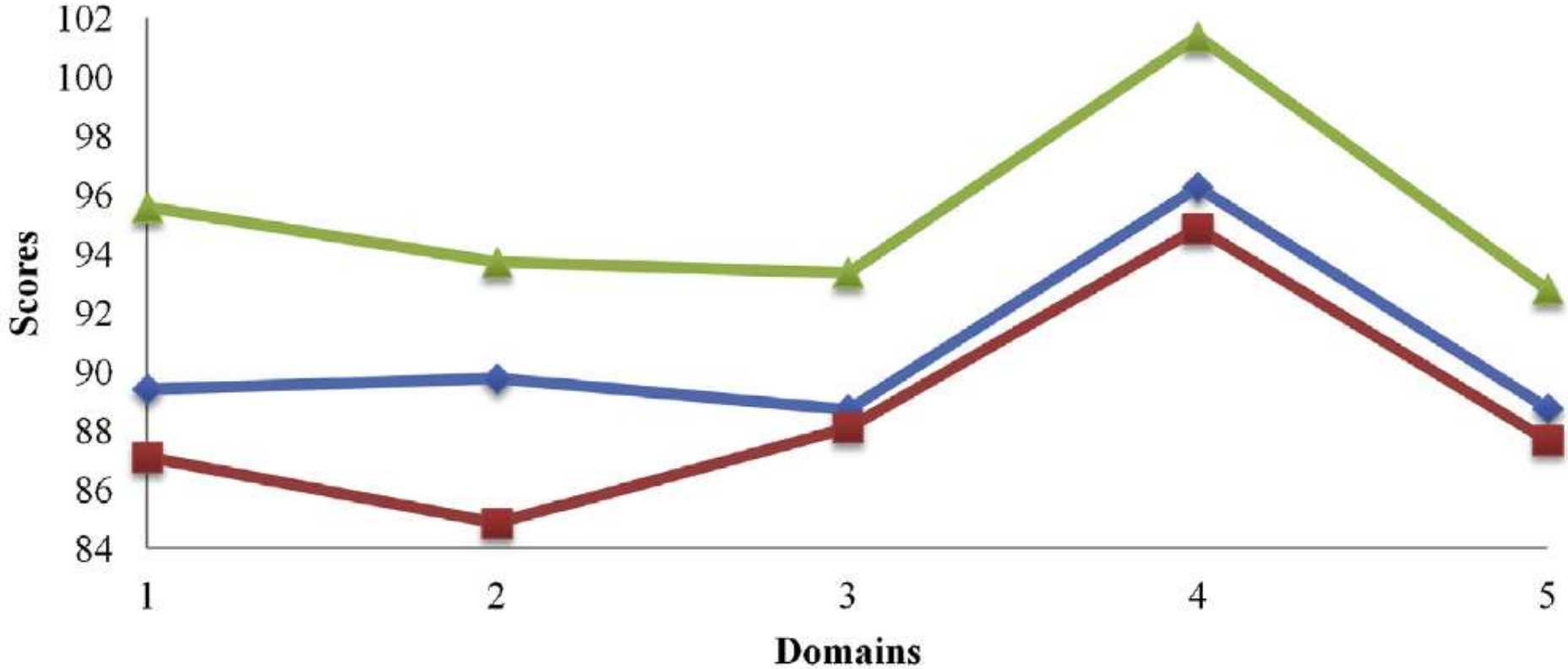
CME

Prevalence of Silent Cerebral Ischemia in Paroxysmal and Persistent Atrial Fibrillation and Correlation With Cognitive Function

Fiorenzo Gaita, MD,* Laura Corsinovi, MD, PhD,* Matteo Anselmino, MD, PhD,* Cristina Raimondo, MD,* Martina Pianelli, MD,* Elisabetta Toso, MD,* Laura Bergamasco, Prof,† Carlo Boffano, MD,‡ Maria Consuelo Valentini, MD,§ Federico Cesarani, MD,‖ Marco Scaglione, MD¶

Turin, Milan, and Asti, Italy


A
B
C



	Controls (N = 90)	PRX AF (N = 90)	PER AF (N = 90)	p PRX / controls	p PER / controls	p PRX/ PER
Domains	92.4 ± 15.4	86.2 ± 13.8	82.9 ± 11.5	< 0.01	< 0.01	0.08
1-Immediate Memory	95.6 ± 17.5	89.9 ± 14.7	87.1 ± 16.9	0.02	< 0.01	0.24
2-Visuo-spatial abilities	93.8 ± 16.7	89.9 ± 18.2	84.8 ± 14.8	0.14	< 0.01	0.04
3-Language	92.9 ± 11.4	88.8 ± 9.1	88.1 ± 8.7	< 0.01	< 0.01	0.59
4-Attention	101.4 ± 21.2	96.6 ± 16.6	94.9 ± 15.6	0.09	0.02	0.47
5-Delayed memory	93.5 ± 11.7	88.7 ± 14.7	87.7 ± 14	0.02	< 0.01	0.64

JACC Vol. 62, No. 21, 2013

Increased risk of cognitive and functional decline in patients with atrial fibrillation: results of the ONTARGET and TRANSCEND studies

Irene Marzona MSc PharmD, Martin O'Donnell MB PhD, Koon Teo MB PhD, Peggy Gao MSc, Craig Anderson MD PhD, Jackie Bosch BScOT MSc, Salim Yusuf MD DPhil

Abstract

Background: The role of atrial fibrillation in cognitive impairment and dementia, independent of stroke, is uncertain. We sought to determine the association of atrial fibrillation with cognitive and physical impairment in a large group of patients at high cardiovascular risk.

Methods: We conducted a post-hoc analysis of two randomized controlled trials involving 31 546 patients, the aims of which were to evaluate the efficacy of treatment with ramipril plus telmisartan (ONTARGET) or telmisartan alone (TRANSCEND) in reducing cardiovascular disease. We evaluated the cognitive function of participants at baseline and after two and five years using the Mini–Mental State Examination (MMSE). In addition, we recorded incident dementia, loss of independence in activities of daily living and admission to long-term care facilities. We used a Cox regression model adjusting for main confounders to determine the association between atrial fibrillation and our primary outcomes: a decrease of three or more points in MMSE score, incident dementia, loss of independence in performing activities of daily living and admission to long-term care.

Results: We enrolled 31 506 participants for whom complete information on atrial fibrillation was available, 70.4% of whom were men. The mean age of participants was 66.5 years, and the mean baseline MMSE score was 27.7 (standard deviation 2.9) points. At baseline, 1016 participants (3.3%) had atrial fibrillation, with the condition developing in an additional 2052 participants (6.5%) during a median follow-up of 56 months. Atrial fibrillation was associated with an increased risk of cognitive decline (hazard ratio [HR] 1.14, 95% confidence interval [CI] 1.03–1.26), new dementia (HR 1.30, 95% CI 1.14–1.49), loss of independence in performing activities of daily living (HR 1.35, 95% CI 1.19–1.54) and admission to long-term care facilities (HR 1.53, 95% CI 1.31–1.79). Results were consistent among participants with and without stroke or receiving antihypertensive drugs.

Interpretation: Cognitive and functional decline are important consequences of atrial fibrillation, even in the absence of overt stroke.

Competing interests: Martin O'Donnell has received grants, consulting fees and payment for lectures from Boehringer-Ingelheim. Koon Teo has received research grants from the Canadian Institutes of Health Research and the Heart and Stroke Foundation of Ontario. Craig Anderson has received project and fellowship grants from the National Health and Medical Research Council of Australia. No other competing interests were declared.

This article has been peer reviewed.

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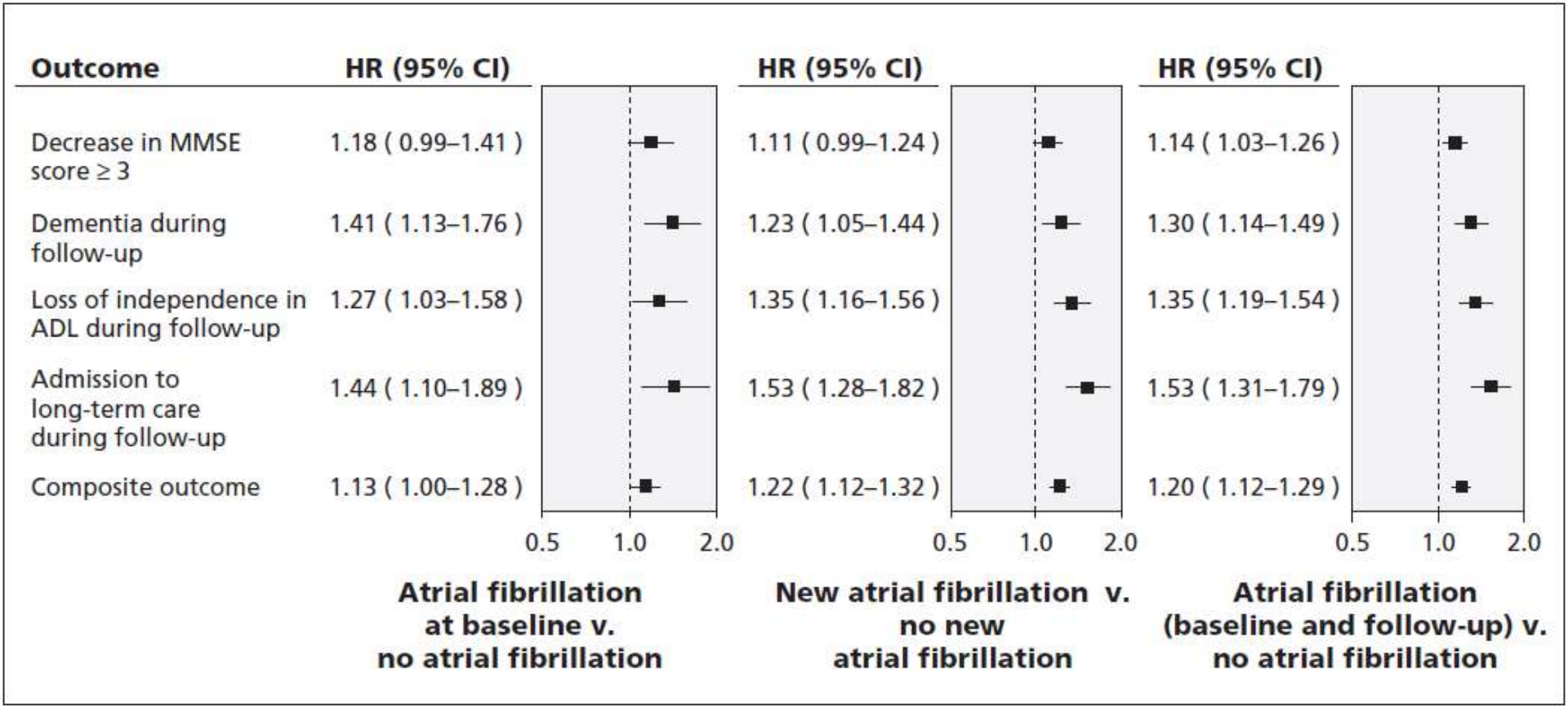
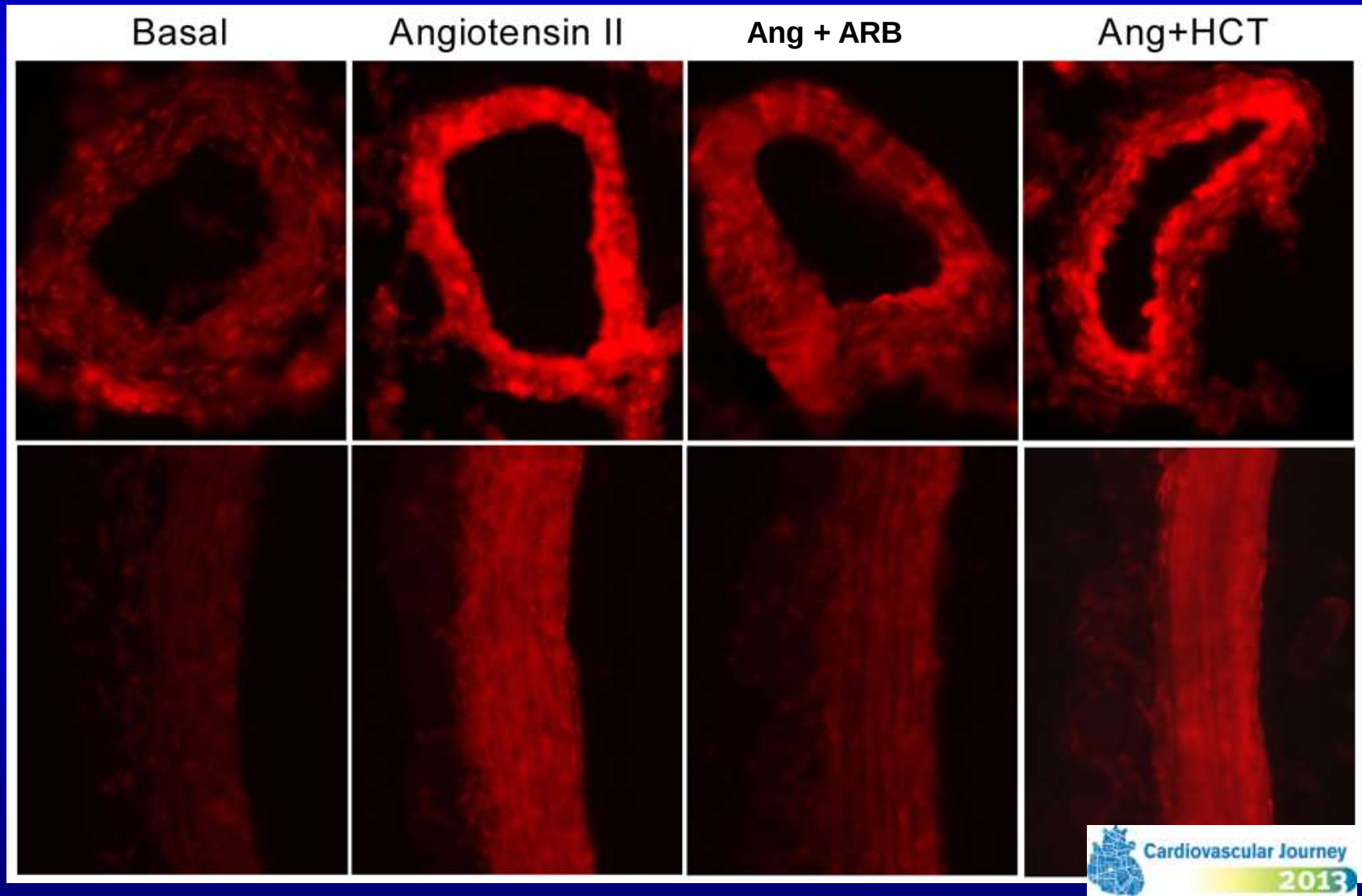
CMAJ 2012. DOI:10.1503/cmaj.111173

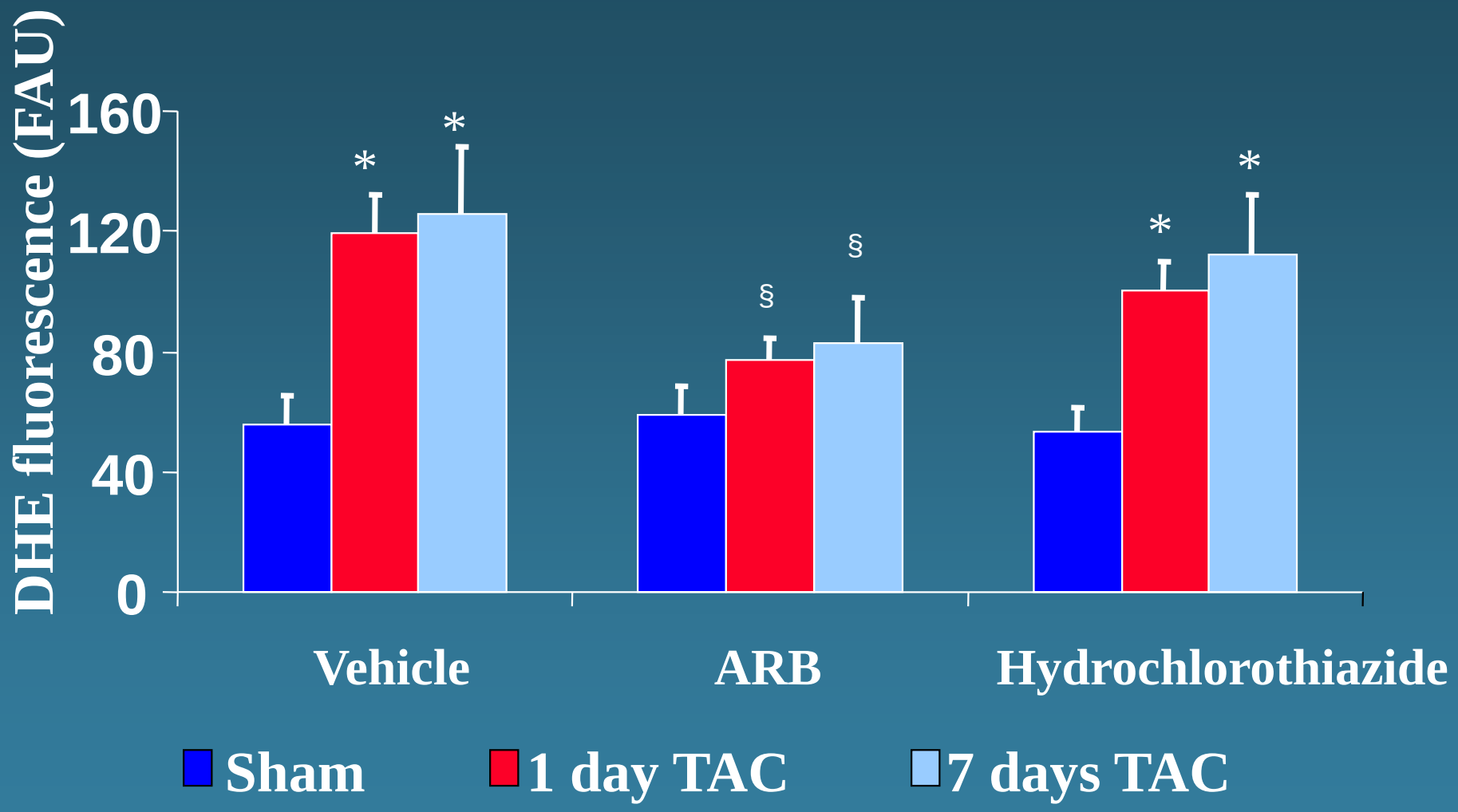


CMAJ, April 3, 2012, 184(6)

AT-1 antagonism protects against angiotensin- induced vascular oxidative stress



AT-1 antagonism protects against pressure-induced oxidative stress in hippocampus



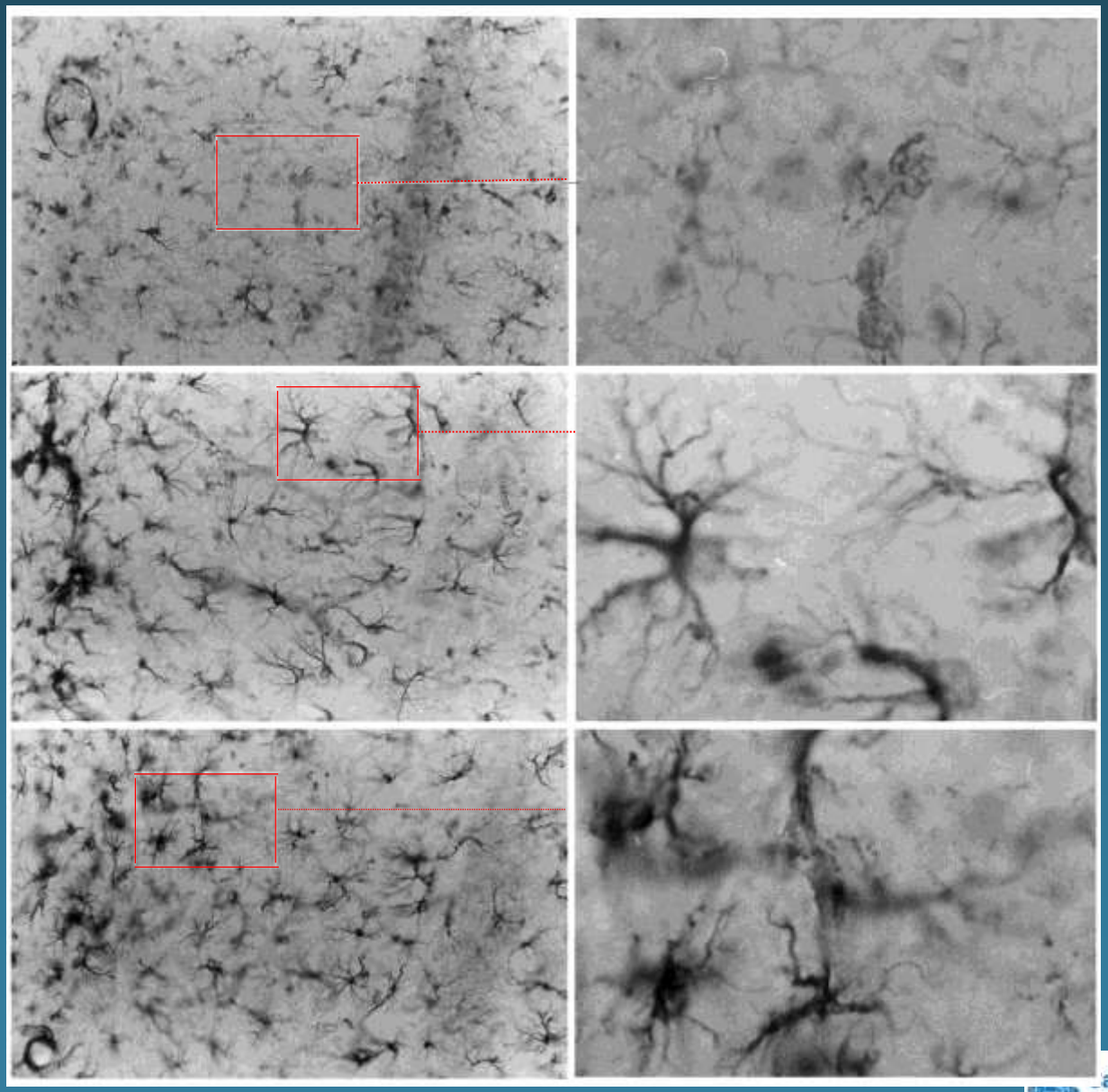
** P < 0.05 vs. Sham*

Astrocytes in the hippocampus

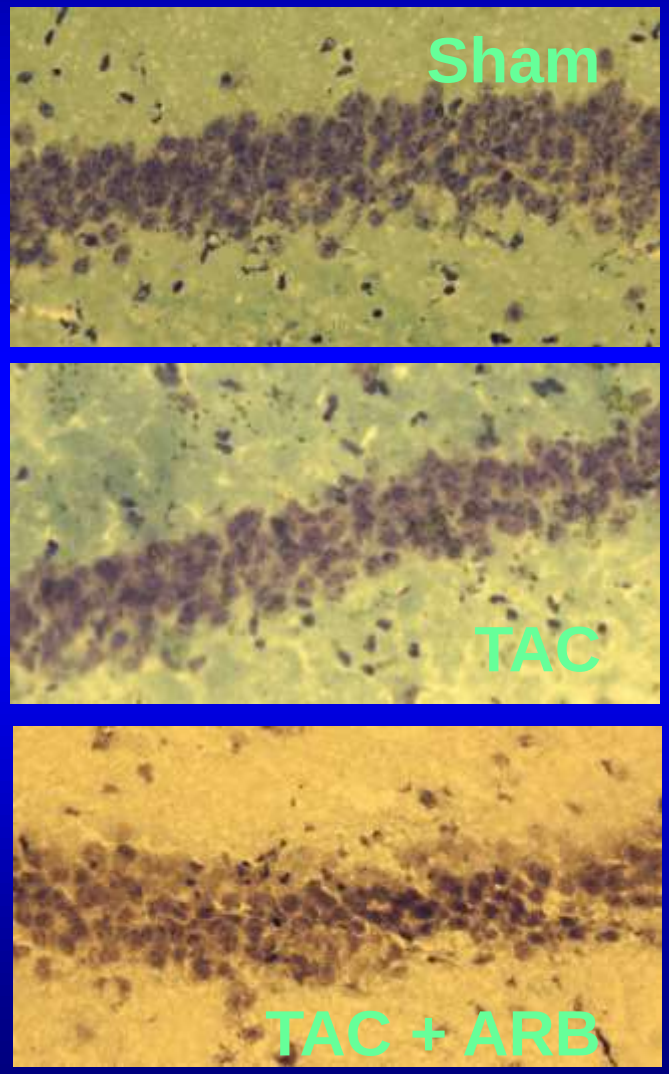
Sham

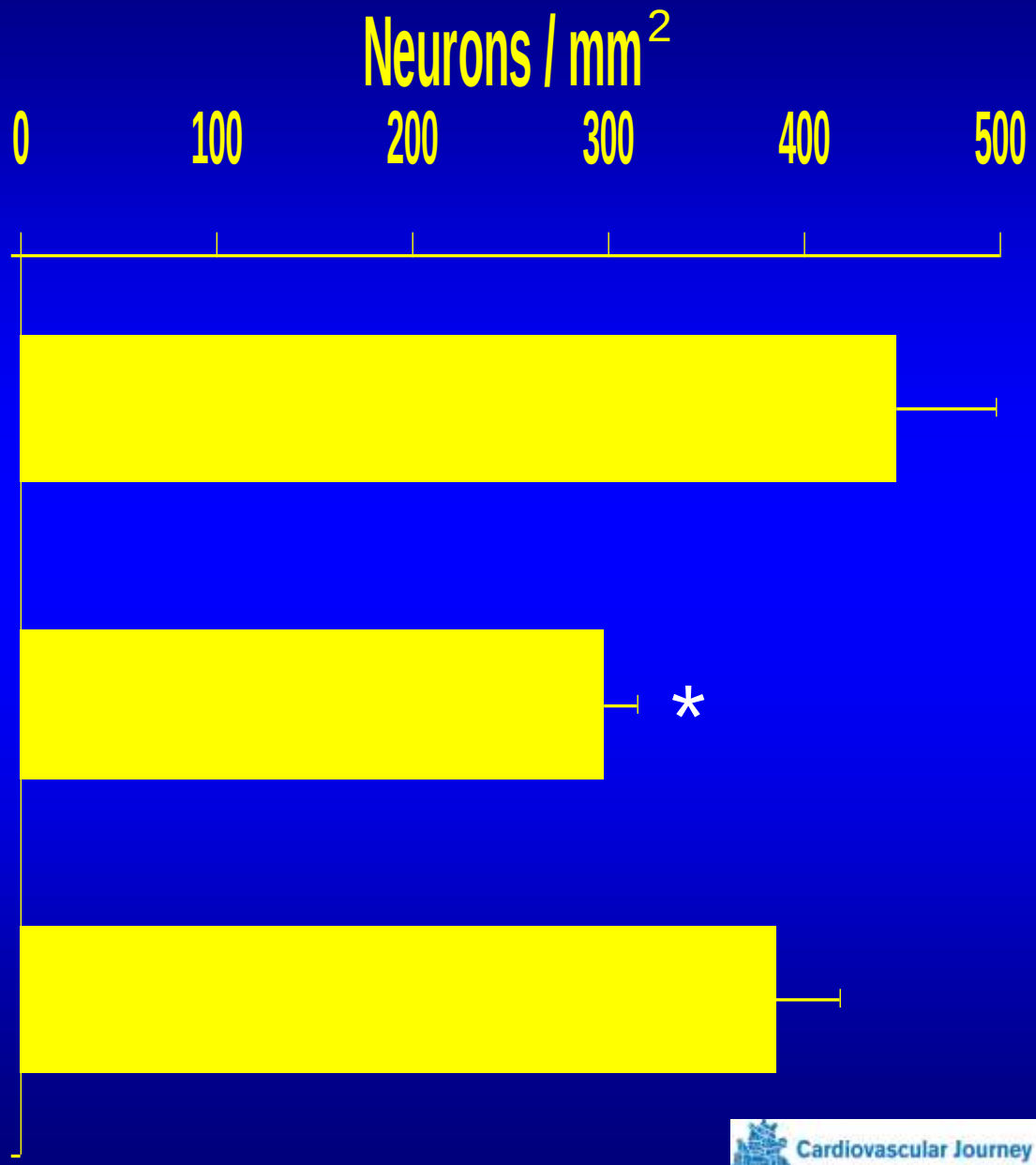
1day TAC

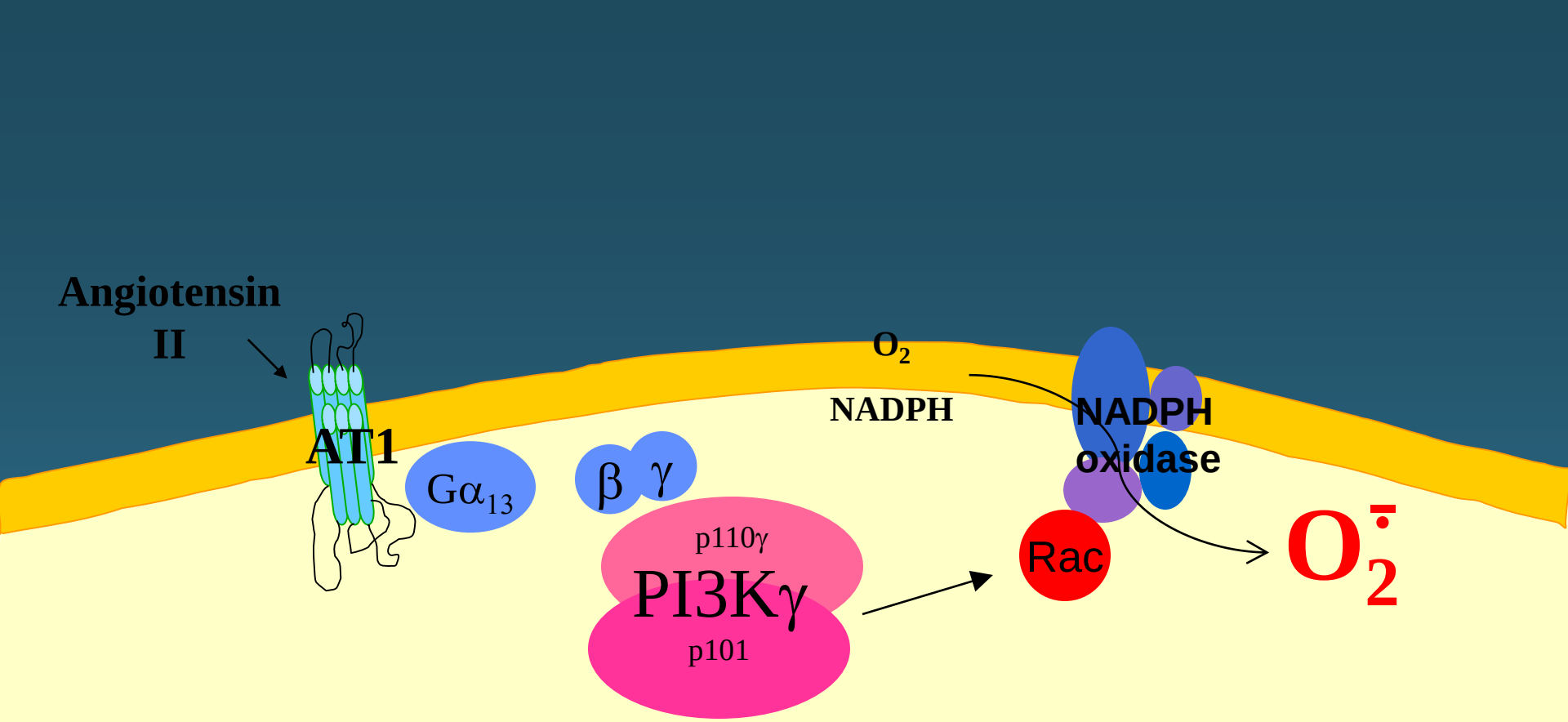
7 days TAC

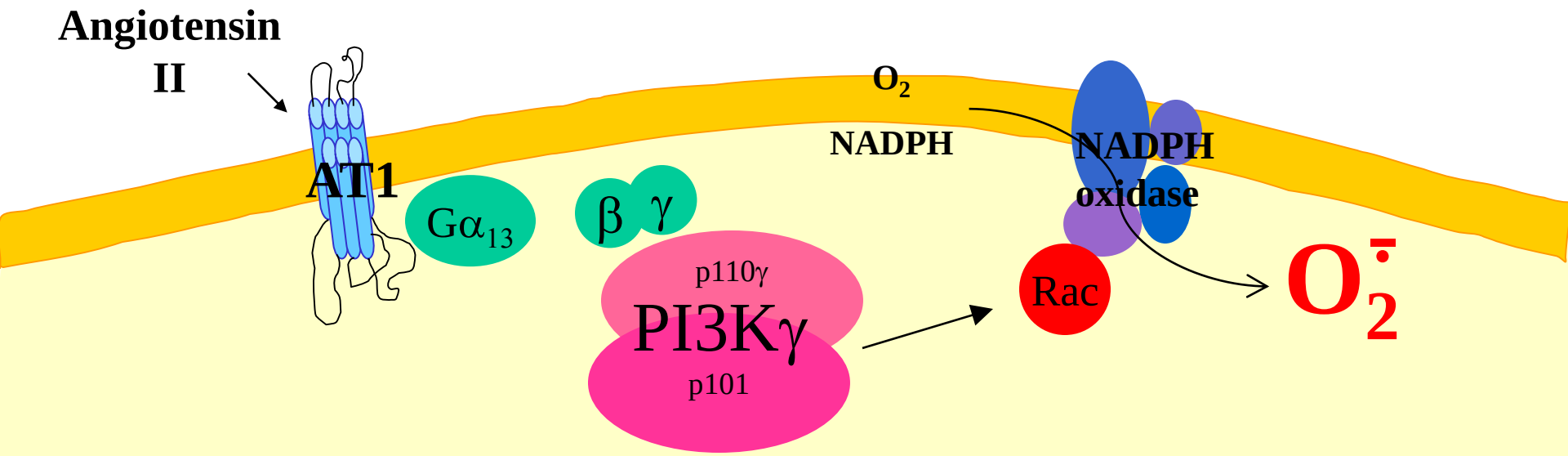


Neuronal degeneration in hippocampus

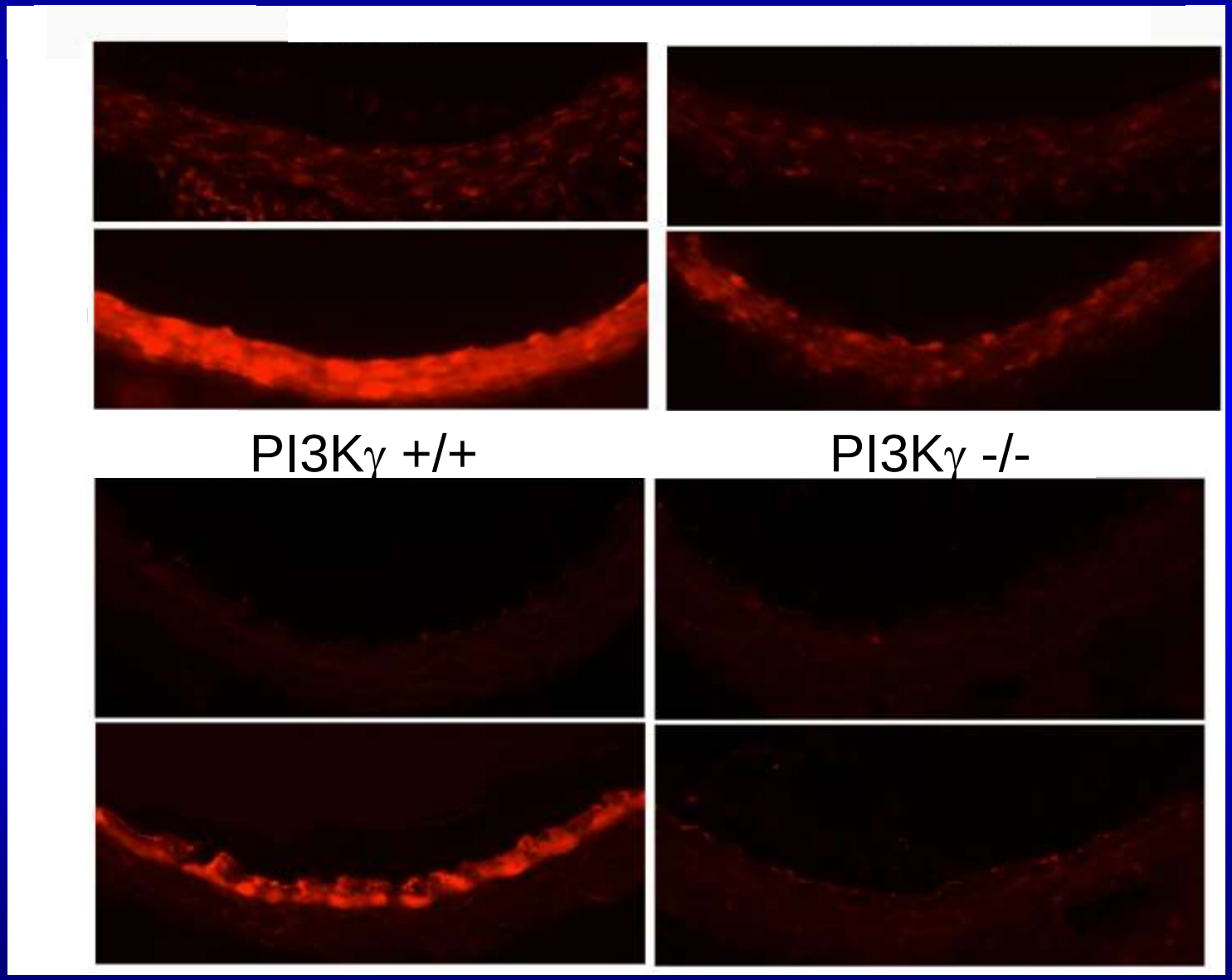





Angiotensin
II
AT1
Gα13
β γ
p110γ
PI3Kγ
p101
O2
NADPH
NADPH
oxidase
Rac
O2-


Angiotensin
II
AT1
Gα13
β
γ
p110γ
PI3Kγ
p101
O2
NADPH
NADPH
oxidase
Rac
O2-

Angiotensin II-induced vascular oxidative stress



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Subtle Post-Procedural Cognitive Dysfunction After Atrial Fibrillation Ablation

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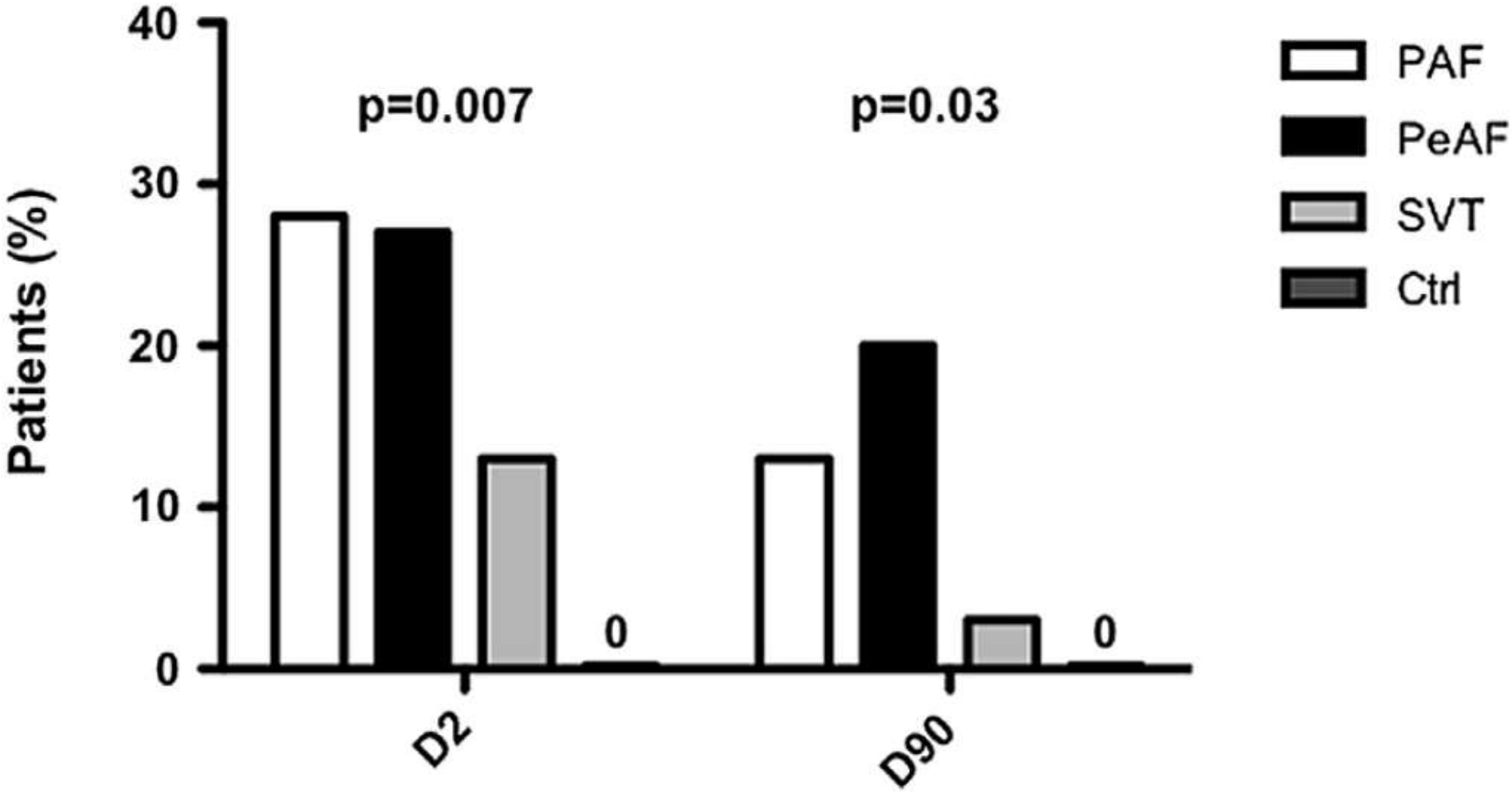
Melbourne, Australia


40
30
20
10
0
Patients (%)
p=0.007
p=0.03
0
0
D2
D90
PAF
PeAF
SVT
Ctrl