Electrophysiology and Pacing in Portugal: current situation

JOÃO PRIMO

Saturday 20th February 2010

Thessaloniki

ASSOCIAÇÃO PORTUGUESA DE ARRITMOLOGIA PACING E ELECTROFISIOLOGIA

DA SOCIEDADE PORTUGUESA DE CARDIOLOGIA

Portugal

- 10.566.212 (July 2005) people

- 2 million in Lisbon area

- 1,3 million in Oporto area

- 43 pacing centres
  (21 implanting ICDs)
- 16 EP centres

- APAPE has 250 associates
- Cardiologists, pace dedicated cardiologists , technicians, electrophysiologists, engineers and industry agents.

Portugal

- ## North zone
  - ❖ Pacing: 9 centres
  - ❖ Pacing/cdi:7 centres
  - ❖ EP: 4 centres

- ## Centre zone
  - ❖ Pacing:9 centres
  - ❖ Pacing/cdi: 5 centres
  - ❖ EP: 1 centre

- ## Lisbon/south zone/islands
  - ❖ 25 pacing centres
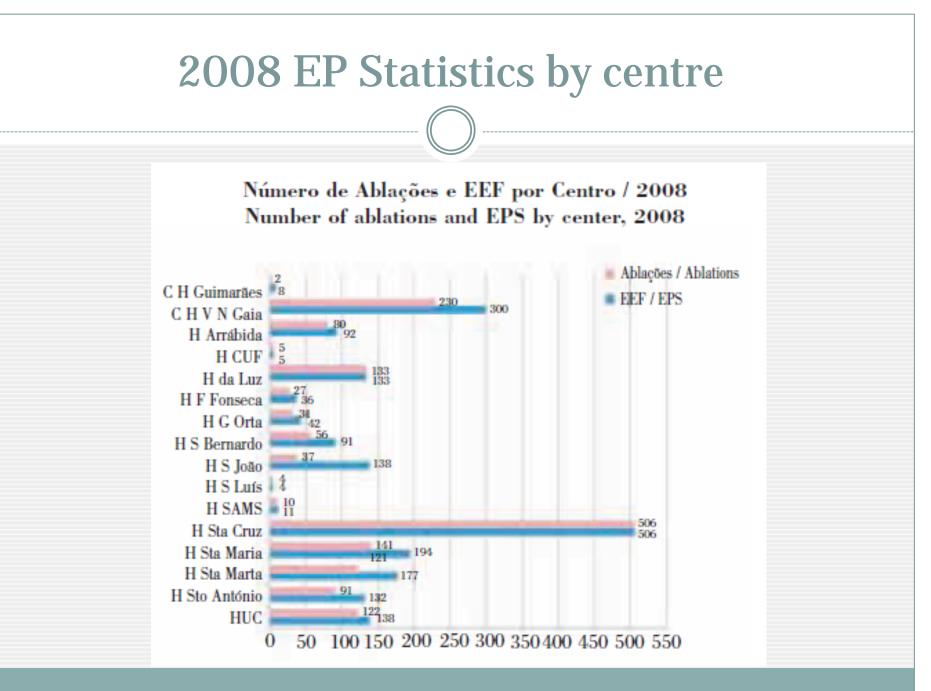 - ❖ 12 Pacing/CDI
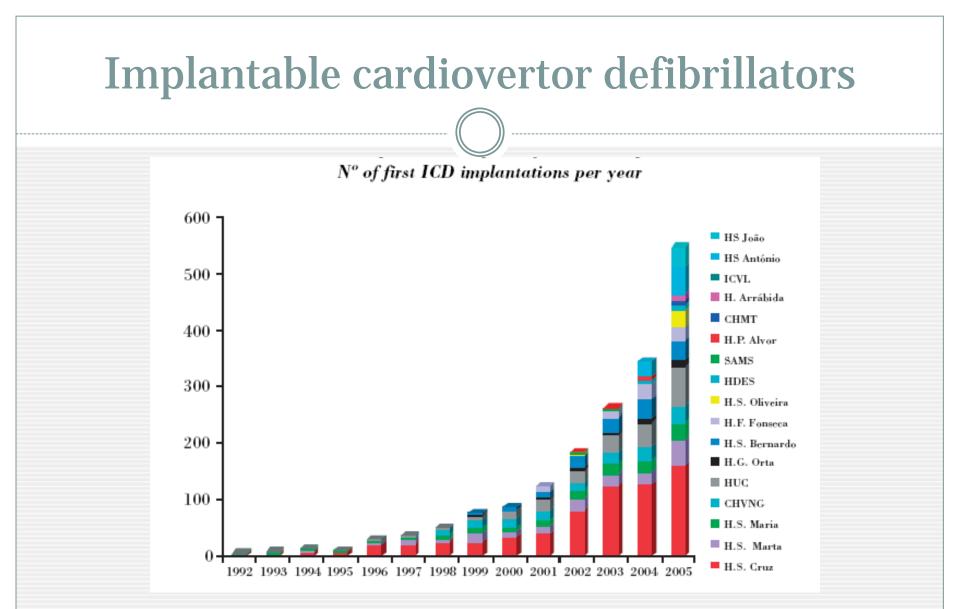 - ❖ 10 EP centres

Health system in Portugal

- The main health system is public.
- Only 5% are private health insurance and professional hearth systems.
- The public hospitals have nowadays private administration
- They receive a global budget from government, according with the level of health care.

Electrophysiology in Portugal

- In 1998 we had only 5 EP centres in Portugal, 3 of them in Lisbon.
- Nowadays we have three fold more (16 centres)
- 4 centres in private hospitals
- There is in Portugal the tendency to increase the number of Eps studies, ablations and complex ablations like ischemic VT and atrial fibrillation

Evolução nº ablações / ano
Numbers of ablations per year

Year	Ablations
1992	64
1993	130
1994	212
1995	252
1996	279
1997	309
1998	448
1999	453
2000	648
2001	763
2002	759
2003	832
2004	952
2005	1112
2006	1360
2007	1523
2008	1596

2008 EP Statistics by centre

Número de Ablações e EEF por Centro / 2008
Number of ablations and EPS by center, 2008

Implantable cardiovertor defibrillators

Nº of first ICD implantations per year

Implantable cardioverter defibrillators

Numbers of first ICD implantations per million population

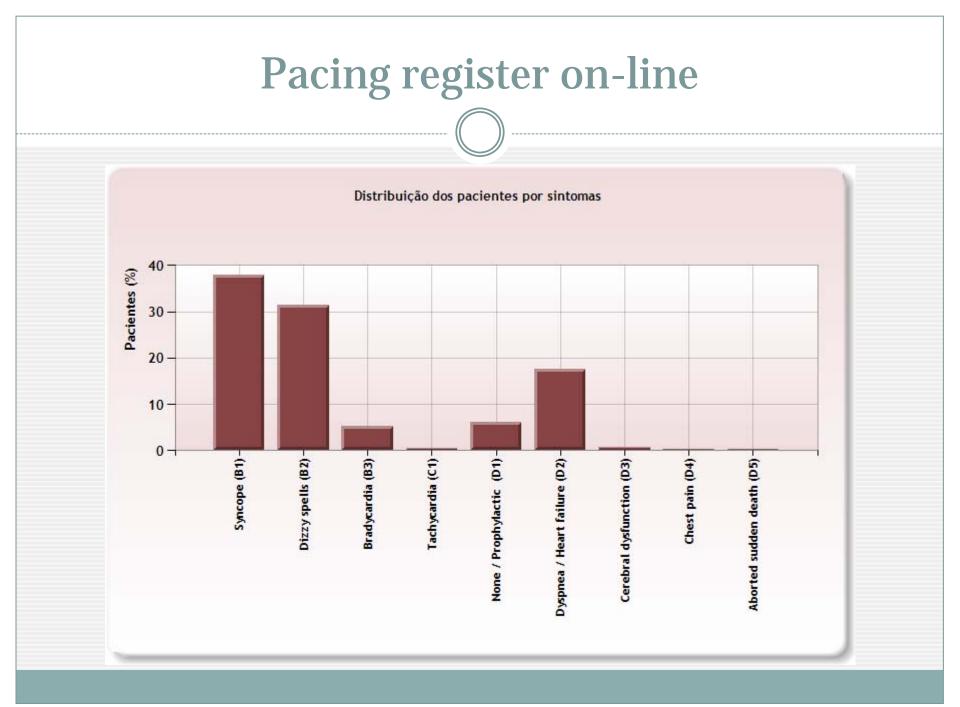| Year	Value
2000	8,5
2001	12,3
2002	15,3
2003	21,6
2004	34,4
2005	54,7
2006	67,4
2007	82,7
2008	96,5
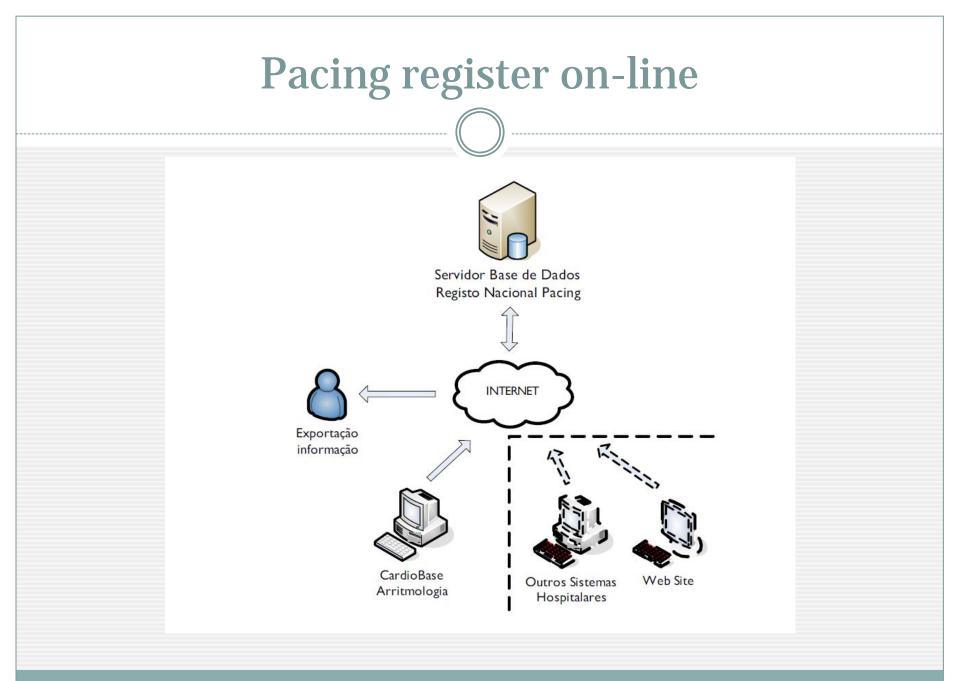
De number of ICD's and CRT´s implant 2009 was 88/million
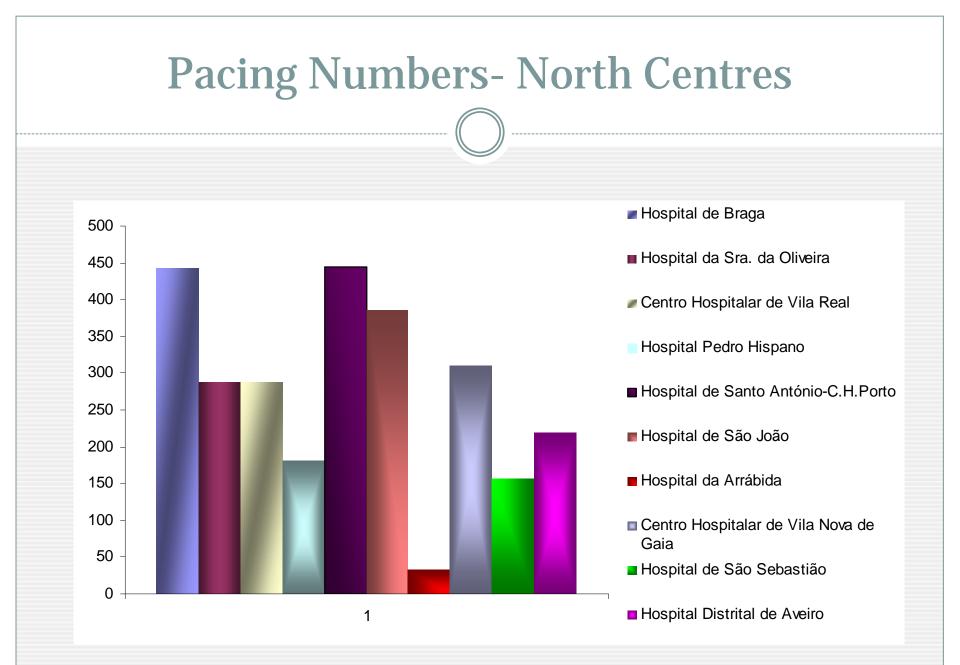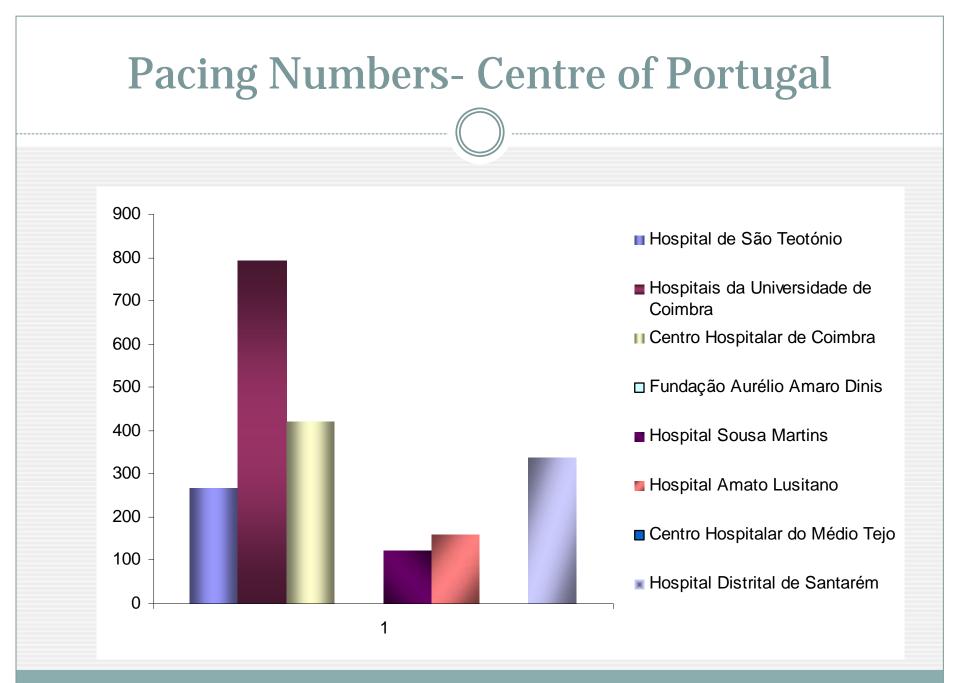
2009 EP Statistics available

Pacing register on-line

- 43 centres. The number of centres performing pacing is well established sense 1995
- Only new 5 centres and mainly in private hospitals
- There is in Portugal the tendency to implant ICD's and CRT-D/P in Pacing Centres
- We have difficulties to get the real number of implanted pacemakers, patient and device characteristics
- Sense last November we are building the register on-line
- Till now 33% of centres are included and next May 51%.
- The informatics solutions are tailored to the centre: a new data base or upgrade of the old ones.
- The pacing data base most be linked to the hospital data base and to the APAPE data base and simplify the daily work in spite to complicate it.

Pacing register on-line

Pacing register on-line

Distribuição dos pacientes por sintomas

Pacing Numbers- North Centres

Legend:
- Hospital de Braga
- Hospital da Sra. da Oliveira
- Centro Hospitalar de Vila Real
- Hospital Pedro Hispano
- Hospital de Santo António-C.H.Porto
- Hospital de São João
- Hospital da Arrábida
- Centro Hospitalar de Vila Nova de Gaia
- Hospital de São Sebastião
- Hospital Distrital de Aveiro

Pacing Numbers- Centre of Portugal

Legend:
- Hospital de São Teotónio
- Hospitais da Universidade de Coimbra
- Centro Hospitalar de Coimbra
- Fundação Aurélio Amaro Dinis
- Hospital Sousa Martins
- Hospital Amato Lusitano
- Centro Hospitalar do Médio Tejo
- Hospital Distrital de Santarém

Pacing Numbers- South and Lisbon

Pacing Numbers- Islands

Chart legend:
- Hospital do Divino Espírito Santo
- Hospital do Santo Espírito de Angra do Heroísmo
- Centro Hospitalar do Funchal

7096 first implantations in 2009 (710 per million)
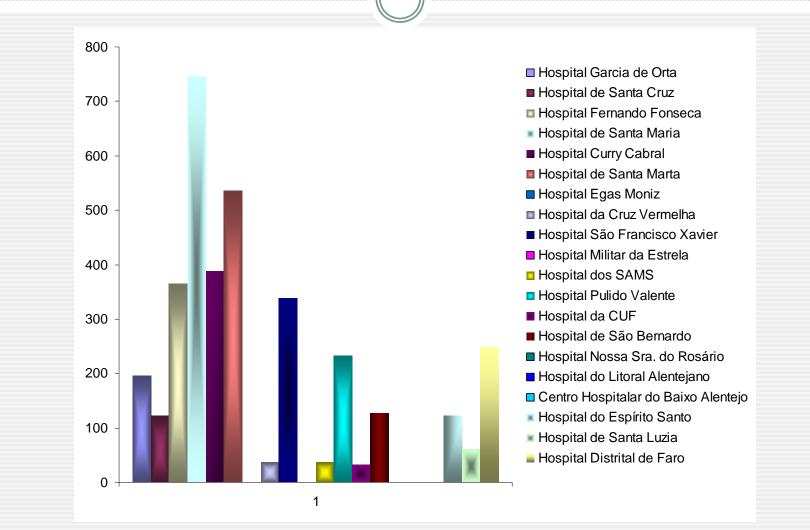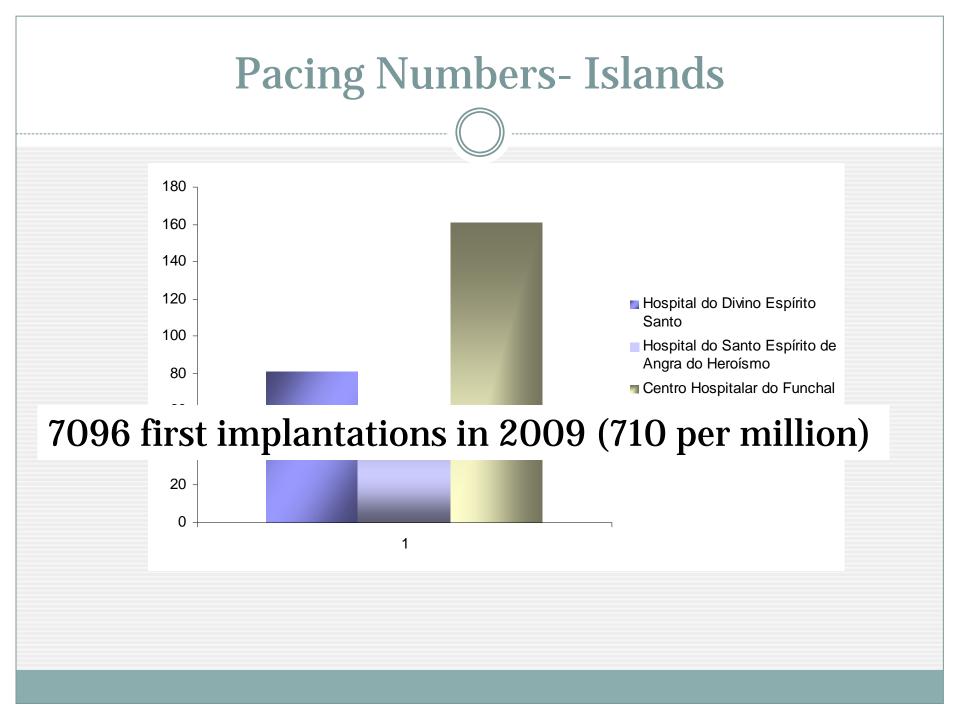
Pacing Register on-line

- It aloud patient organization since implantation to follow-up.
- All the patient information easily is transferred to another hospital.
- Is possible statistic data treatment.
- We are able to adjust the geographic needs and to adjust the net of heath care.
- We get numbers to talk to the people who love them: government and hospital administrations
- Correct numbers to EHRA
- Possibility of multicentre studies

Subspecialty of electrophysiology

- Since 2007 we got the title of subspecialist of Portuguese medical board.
- There are rules and a EP board.
- The new candidates are submitted to examination by a jury of three senior EP members.
- There is a APAPE purse to support formation in EP with imposed rules.
- There are 4 centres recognized able to give formation in Portugal

Portuguese Rhythm Association big challenges

- The register on-line of pacing, defibrillation and EP
- To improve the quality of the associates
- To expand therapeutics supporting the beginning of new centres in EP and ICDs
- To try a different way to ICD imbursement
- Organization of meetings
- Education of general practitioners and others professionals
- Public campaigns in Sudden death
- A prevalence study in atrial fibrillation

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North demographics

Entre Douro e Vouga	276.812
Douro	221.853
Tâmega	551.309
Alto tráz os Montes	223.333
Ave	509.968
Cavado	393.063
Minho lima	250.275
Large Oporto	1.260.680
North	3.687.293

source: INE Censos 2001

Implantable Cardioverter Defibrillator Utilization Based on Discharge Diagnoses from Medicare and Managed Care Patients

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ICD Utilization. *Introduction:* Implantable cardioverter defibrillators (ICDs) have become an accepted therapy for patients at high risk of sudden cardiac death. To assess the current utilization of this therapy, we estimated the number of patients at risk of sudden death using an historical claims-based study and compared these results to current ICD usage volumes.

Methods and Results: Managed care and Medicare databases (claims related to 4.6 million covered U.S. lives during a 12-month period) were analyzed to identify patients who had either a primary or secondary diagnosis of ventricular tachycardia, ventricular fibrillation, ventricular flutter, or cardiac arrest. These patients were further required to have a diagnosis code indicating a previous myocardial infarction or congestive heart failure. Patients who died during the study period or did not have medical insurance were excluded. In the base case scenario, 1,226 patients per million population were identified as potential ICD candidates. Sensitivity analyses reduced that value to a range from 736 to 1,140 ICD candidates per million population. Sensitivity factors considered included acute myocardial infarction, comorbidities, age, secondary ventricular tachycardia/ventricular fibrillation diagnosis, and varying degrees of left ventricular dysfunction. These results contrast with an ICD usage rate of 416 per million population in the United States and lower rates in other countries.

Conclusion: This study suggests that, based on discharge diagnoses, many patients who could benefit from ICDs are not receiving this therapy. Diverse reasons for this underutilization should be addressed to improve access to, and appropriate use of, this therapy. *(J Cardiovasc Electrophysiol, Vol. 13, pp. 38-43, January 2002)*

implantable cardioverter defibrillator, implant rates, utilization, ventricular tachycardia, ventricular fibrillation, sudden cardiac death, claims-based study
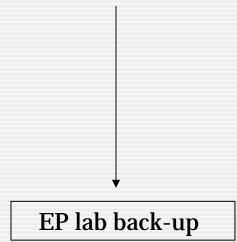
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736 ICD implanted/million/year

Nº predictable of implants =2714/year

source: INE Censos 2001

We have implanted in this year only 264 ICDs

Implementation of new Centres in the
Old pacing centres with lots of experience
And with capacity to implant ICD's
After a educational programme

EP lab back-up

Portuguese Rhythm Association big challenges

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Lisbon Arrhythmias 2010

- Is the main meeting every year .
  (12/13/February/2009 in Cascais).
- Annually Pacing Centres meetings
- EP meeting, themes of electrophysiology every year in November
- We support local meetings
- Courses of Arrhythmology for fellows in Cardiology

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Save your heart

- Directed mainly to the family doctors
- But also to the general population
- Includes meetings about sudden death
- Guidelines to ICD divulgation
- A net site with a special area to family doctors

A prevalence study in atrial fibrillation

PREVALÊNCIA DE FIBRILHAÇÃO AURICULAR NA POPULAÇÃO PORTUGUESA COM 40 OU MAIS ANOS
ESTUDO FAMA

Daniel Bonhorst [1], Miguel Mendes[2], Pedro Adragão[1], João Primo[3], João de Sousa[1], Eva Leiria[4], Pedro rocha[4]

1 – Instituto Português do Ritmo Cardíaco, 2 – Centro Hospitalar de Lisboa Ocidental – Hospital de Santa Cruz (Serviço de Cardiologia), 3 – Associação Portuguesa de Arritmologia, Pacing e Electrofisiologia,
4 – KeyPoint, Consultoria Científica
Rev Port Cardiologia

A prevalence study in atrial fibrillation

10 400 individuals with age of 40 years or more were included randomly
Included in all the Portugal
Everybody perform a ECG and answer a questioner

	Prevalência (%)	$IC_{95\%}$	p-value
Masculino	2,5	[2,0; 2,9]	0,945
Feminino	2,5	[2,1; 2,9]	
40-49 anos	0,2	[0,0; 0,4]	
50-59 anos	1,0	[0,6; 1,4]	
60-69 anos	1,6	[1,1; 2,1]	<0,001
70-79 anos	6,6	[5,4; 7,8]	
80 ou mais anos	10,4	[3,6; 17,3]	

A prevalence study in atrial fibrillation

Institutional Collaboration