Lessons learnt from a pilot AAA screening program in central Greece

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ABSTRACT

Background: Abdominal aortic aneurysm (AAA) screening has led to decrease of aneurysm related and all-cause mortality. International Vascular societies strongly recommend AAA screening for the management of AAAs. The objective of our study is to present the outcome of the first pilot AAA screening program in Central Greece.

Methods: Individuals from both urban and rural areas of Central Greece, were invited through public primary health care units (state insurance and municipal organizations) to participate to a screening program. Only men, aged >60 years old without a previously-known diagnosis of AAA were included. Age, height and weight, co-morbidities such as hypertension (HT), hyperlipidemia, smoking, coronary artery disease (CAD), diabetes mellitus, chronic obstructive pulmonary disease (COPD), cerebro-vascular disease (CVD), concomitant presence (or previous surgery) of hernia and a family history of AAA and hernia were recorded. The infrarenal aortic as well as both common iliac artery (CIA) diameters were assessed by color ultrasound examination. Diameter values of >30mm for the infrarenal abdominal aorta and >18mm for the CIAs, were defined as aneurysmatic.

Results: 1256 individuals were enrolled in the program (response rate 73%). The incidence of AAA was 2% (25/1256; mean AD: 37.3±11). The incidence of aortic diameter (AD) 25-30mm was 3.5% (44/1256; mean AD: 26±11). CIA aneurysm was detected in 2.3% (29/1256) [1(4%) in the >30mm group vs 28 (2.2%) in the <30mm group)]. The incidence of AAA was associated with increasing age (aorta>30mm; 74±6 years old vs. aorta<30mm; 71±7 years old, p<.042), former smoking (aorta>30mm; 28% vs. aorta<30mm; 8.5%, p<.006) and duration of smoking (aorta>30mm; 42±13 years vs. aorta<30mm; 32±14 years, p<.008), while a negative association was found with diabetes mellitus (aorta>30mm; 4% vs. aorta<30mm; 20%, p<.048). In sub-group analysis, between AD of 25-30mm and AD<25mm, AD of 25-30 was associated with greater height (aorta 25-30mm, 171±6cm vs. aorta <25mm, 167±9cm, p<.007) and weight (aorta 25-30mm, 84±12kg vs. aorta <25mm, 80±12kg, p<.05) as well as smoking (aorta 25-30mm, 52% vs. aorta <25mm, 24%, p<.001), former smoking (aorta 25-30mm, 20% vs. aorta <25mm, 8%, p<.003), duration of smoking (aorta 25-30mm, 40±10 years vs. aorta <25mm, 31±14 years, p<.007) and coronary artery disease (aorta 25-30mm, 45% vs. aorta <25mm, 22%, p<.006). After multivariate regression analysis, only duration of smoking was correlated with AAA incidence (1.05, CI. 0.02-6.6; p=0.01). Among individuals with AAA, 60% were on statin therapy and 36% on antiplatelets, while in the aorta<30mm group, 47.5% received statins and 23% antiplatelets.

Conclusions: The incidence of AAA in Central Greece is 2%. Duration of smoking was the strongest associated factor with AAA incidence. Individuals with AD of 25-30mm seem to have different characteristics to individuals with AD < 25mm.

PURPOSE

The objective of our study is to present the outcome of the first pilot AAA screening program in Central Greece.

METHODS

In Prefecture of Larisa there are 138,826 official citizens. The population >60 years of age is 34,920 (45% males; 15,655). The intention of this pilot screening program was to screen over 10% of the male population, thus over 1500 individuals. Individuals were invited through public primary health care units (state insurance and municipal organizations) to participate to a screening program. Only men, aged >60 years old without a previously-known diagnosis of AAA were included. Co-morbidities and ultrasound examination were recorded. Diameter values of >30mm for the infrarenal abdominal aorta and >18mm for the CIAs, were defined as aneurysmatic

RESULTS

- ➢ Incidence of AAA was 2% (25/1256)
- ➢ Incidence of AD (25-30mm) was 3.5% (44/1256)
- ➢ Incidence of CIA was 2.3% (29/1256)

	Aorta>30	Aorta<30	P value	Total
	25	1231		1256
Aortic diameter	37.3±11	19±7	0.001	19±4
RCIA diameter	11±2	10±3	0.058	10.4±2
LCIA diameter	12±6	10±2	0.007	10.1±2
CIA > 18	1 (4%)	28 (2.2%)	0.5	29
Labour	18 (72%)	859 (70%)	0.9	877
Family history of AAA	1 (4%)	50 (4%)	0.99	51
Hernia	3 (12%)	159 (13%)	0.8	162
Family history of hernia	3 (12%)	105 (8.5%)	0.54	108

RESULTS

	Aorta>30	Aorta<30	P value	Total
	25	1231		1256
Age	74±6	71±7	0.042	71±7
Height	170±6	168±9	0.22	168±10
Weight	84±11	81±12	0.23	81±14
HT	20 (80%)	905 (73%)	0.6	862
Duration of HT	9±6	9.5±8	0.72	9.5±7
HL	15 (60%)	587 (47.5%)	0.22	602
Duration of HL	6.9±5.2	6.7±6	0.8	6.7±9
Smoking	8 (32%)	309 (25%)	0.4	317
Ex smoking	7 (28%)	104 (8.5%)	0.006	111
Ever smoking	15 (60%)	413 (33.5%)	0.005	428
Duration of smoking	42±13	32±14	0.008	32±15
Packs/year	1.4±1	1.5±1.3	0.78	1.5±1.2
CAD	9 (36%)	280 (23%)	0.1	289
Duration of CAD	10±6.3	9.5±7.4	0.65	9.5±8
DM	1 (4%)	244 (20%)	0.048	245
Duration of DM	9±2	8±7	0.7	8±8
COPD	3 (12%)	87 (7%)	0.35	90
Duration of COPD	2.5±1	8±7.8	0.3	8±6
CVD	3 (12%)	57 (4.6%)	0.08	60

	Total population (n=1256)	AAA detected (n=25)
≥ 85	50	2 (4%)
80-84	109	4 (4%)
75-79	234	6 (2,5%)
70-74	313	6 (1,9%)
65-69	283	5 (1,7%)
60-64	267	2 (0,7%)

After multivariate regression analysis , only duration of smoking was associated to AAA incidence

(1.05, CI 0.02-6.6; p=0.01)

RESULTS

	Aorta 25-30	Aorta<25	P value
	44	1187	
Age	72.4±6	71±7	0.16
Height	171±6	167±9	0.007
Weight	84±12	80±12	0.05
HT	33 (75%)	872 (73%)	0.34
Duration of HT	11±10	9.5±9	0.4
HL	24 (54%)	563(48%)	0.35
Duration of HL	7.4±7	6.7±6	0.64
Smoking	23 (52%)	286 (24%)	0.001
Ex smoking	9 (20%)	95 (8%)	0.003
Ever smoking	32 (72%)	381 (32%)	0.05
Duration of smoking	40±10	31±14	0.007
Packs/year	1.3±1	1.5±1.4	0.53
CAD	20 (45%)	260 (22%)	0.006
Duration of CAD	10±9.5	9.5±7.5	0.8
DM	11 (25%)	233 (20%)	0.86
Duration of DM	6.5±4	8±7	0.44
COPD	5 (11.3%)	82 (7%)	0.19
Duration of COPD	11±6.6	8.2±8	0.5
CVD	4 (9%)	53 (4.5%)	0.14
RCIA diameter	11±3	10±3	0.042
LCIA diameter	11±2	10±3	0.033
CIA > 18	2 (4.5%)	26 (2.2%)	0.3
Labour	35 (80%)	824 (69%)	0.3
Family history of AAA Hernia	2 (4.5%)	48 (4%)	0.9
Family history of hernia	4 (9%)	101 (8.5%)	0.8

Among individuals with AAA, 60% were on statin therapy and 36% on antiplatelets, while in the aorta<30mm group, 47.5% received statins and 23% antiplatelets

CONCLUSION

The incidence of AAA in Central Greece is 2%. Duration of smoking was the strongest associated factor with AAA incidence. Individuals with AD of 25-30mm seem to have different characteristics to individuals with AD < 25mm

DISCLOSURES

NONE