Hospital Plató

II JORNADA D'ATENCIÓ COMPARTIDA EN ENDOCRINOLOGIA

Un pas més enllà de l'assistència: Recerca en DM-2

Àrea Integral de Salut Barcelona Esquerra

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USO DE LA ECOGRAFIA EN LA PRÁCTICA CLÍNICA

Dr. Antoni Sisó Almirall
Centro de Salud Les Corts (CAPSE).
Grupo Transversal de Investigación en Atención Primaria (IDIBAPS)
asiso@clinic.ub.es

USO DE LA ECOGRAFIA EN LA PRÁCTICA CLÍNICA

- ✓ La ecografía empieza su desarrollo a partir de la 1ª Guerra Mundial, utilizando la misma tecnología que utilizaba el sónar.
- ✓ La 1ª imagen sonográfica publicada sería la de un cráneo humano en 1947.
- ✓ La 1ª imagen ultrasónica publicada de una enfermedad abdominal fue en 1958.
- ✓ En las siguientes décadas, radiólogos, cardiólogos y obstetras son los que utilizan la ecografía de forma generalizada.
- ✓ Es a partir del año 2000 en adelante que empiezan a desarrollarse máquinas portátiles de pequeño tamaño y a introducirse el concepto de *point-of-care ultrasonography*.

The NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

CURRENT CONCEPTS

Point-of-Care Ultrasonography

Christopher L. Moore, M.D., and Joshua A. Copel, M.D.

N ENGL J MED 364;8 NEJM.ORG FEBRUARY 24, 2011

Selected applicationsof Point-of-Care Ultrasonography	
Specialty	**Ultrasound Applications**
Anesthesia	Guidance for vascular access, regional anesthesia, monitoring of fluid status and cardiac function
Cardiology	Echocardiography, intracardiac assessment
Critical care	Procedural guidance, pulmonary assessment
Dermatology	Assessment of skin lesions and tumors
Emergency	FAST, focused emergency assessment
Endocrinology	Assessment of thyroid and parathyroid, procedural guidance
General surgery	US of the breast, procedural guidance
Gynecology	Assessment of cervix, uterus, and adnexa.
Obstetrics	Assessment of pregnancy, fetal abnormalities
Nephrology	Vascular access for dialysis

Selected applications of Point-of-Care Ultrasonography	
Specialty	**Ultrasound Applications**
Neurology	Transcranial doppler, peripheral-nerve evaluation
Ophthalmology	Cornial and retinal assessment
Pediatrics	Assessment of bladder
Rheumatology	Monitoring of synovitis
Trauma surgery	FAST*, musculoskeletal applications
Urology	Renal, bladder, and prostate assessment
Vascular	Carotid, arterial and venous assessment, Aneurysms

Focused **Assessment with **S**onography for **T**rauma*

N ENGL J MED 364;8 NEJM.ORG FEBRUARY 24, 2011

REVIEW ARTICLE

CURRENT CONCEPTS

Point-of-Care Ultrasonography

Christopher L. Moore, M.D., and Joshua A. Copel, M.D.

ULTRASONOGRAPHY IS A SAFE AND EFFECTIVE FORM OF IMAGING THAT has been used by physicians for more than half a century to aid in diagnosis and guide procedures. Over the past two decades, ultrasound equipment has become more compact, higher quality, and less expensive, which has facilitated the growth of point-of-care ultrasonography — that is, ultrasonography performed and interpreted by the clinician at the bedside. In 2004, a conference on compact ultrasonography hosted by the American Institute of Ultrasound in Medicine (AIUM) concluded that "the concept of an 'ultrasound stethoscope' is rapidly moving from the theoretical to reality." This conference included representatives from 19 medical organizations; in November 2010, the AIUM hosted a similar forum attended by 45

From the Departments of Emergency Medicine (C.L.M.) and Obstetrics, Gynecology, and Reproductive Sciences (J.A.C.), Yale University School of Medicine, New Haven, CT. Address reprint requests to Dr. Moore at the Department of Emergency Medicine, Yale University School of Medicine, 464 Congress Ave., Suite 260, New Haven, CT 06519, or at chris.moore@yale.edu.

N Engl J Med 2011;364:749-57.

Portabilidad

Criteris de planificació del diagnòstic per la imatge

Programa per al desenvolupament del diagnòstic per la imatge

Setembre de 2010

Direcció General de Planificació i Avaluació

Departament de Salut
Trav. de les Corts, 131-159
Edifici Ave Maria
08028 Barcelona
www.gencat.cat/salut

Edició: Generalitat de Catalunya
Coordinació editorial: Direcció General de Planificació i Avaluació, Departament de Salut
Assessorament i correcció lingüística: Secció de Planificació lingüística del Departament de Salut

Primera edició: Barcelona, setembre de 2010

« Les dades de seguiment de llistes d'espera del CatSalut estimen un temps mitjà d'espera el desembre del 2009 de 46 dies per a ecografia abdominal i de 37 dies per a ecografia ginecològica»

« Hi ha una tendència clara cap a l'extensió del seu ús fora dels serveis de diagnòstic per la imatge, amb la implicació de diferents perfils professionals. La qüestió crítica és sobre la formació i les competències dels professionals ».

Atherosclerosis 219 (2011) 623–629

Contents lists available at SciVerse ScienceDirect

Atherosclerosis

journal homepage: www.elsevier.com/locate/atherosclerosis

Qualitative score of systemic arteriosclerosis by vascular ultrasonography as a predictor of coronary artery disease in type 2 diabetes

Ayumu Hirata[a], Ken Kishida[a,b,*], Aki Hiuge-Shimizu[a], Hideaki Nakatsuji[a], Tohru Funahashi[a,b], Iichiro Shimomura[a]

[a] Department of Metabolic Medicine, Graduate School of Medicine, Osaka University, Osaka, Japan
[b] Department of Metabolism and Atherosclerosis, Graduate School of Medicine, Osaka University, Osaka, Japan

Total systemic vascular score (range: 0-4)
The presence of the following abnormalities;
1) plaque (at four arteries)
2) calcification (at four arteries)
3) arterial elongation or aneurysm (at aorta)
4) velocity ≥2 m/sec (at proximal renal artery)
Each of the above abnormalities was scored 0 for its absence and 1 for its presence, at least on either side of the four arteries.

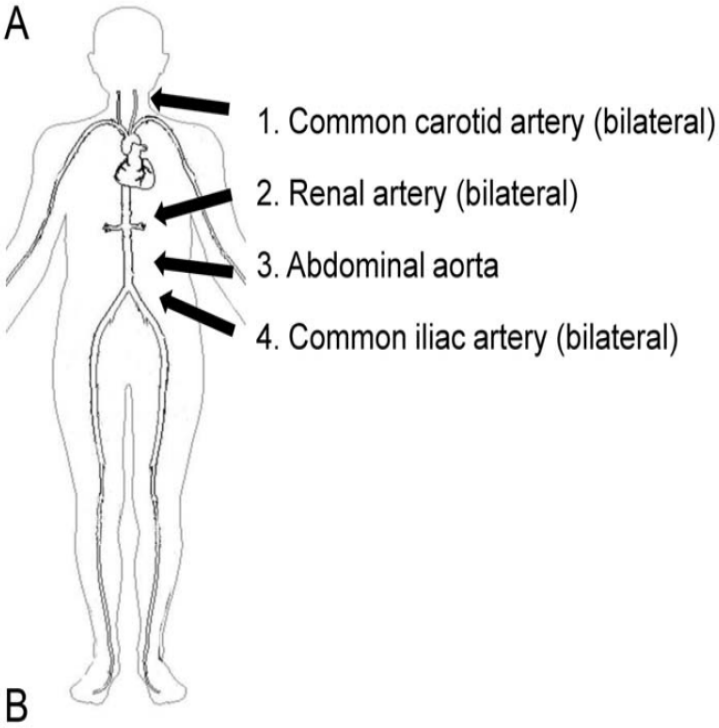
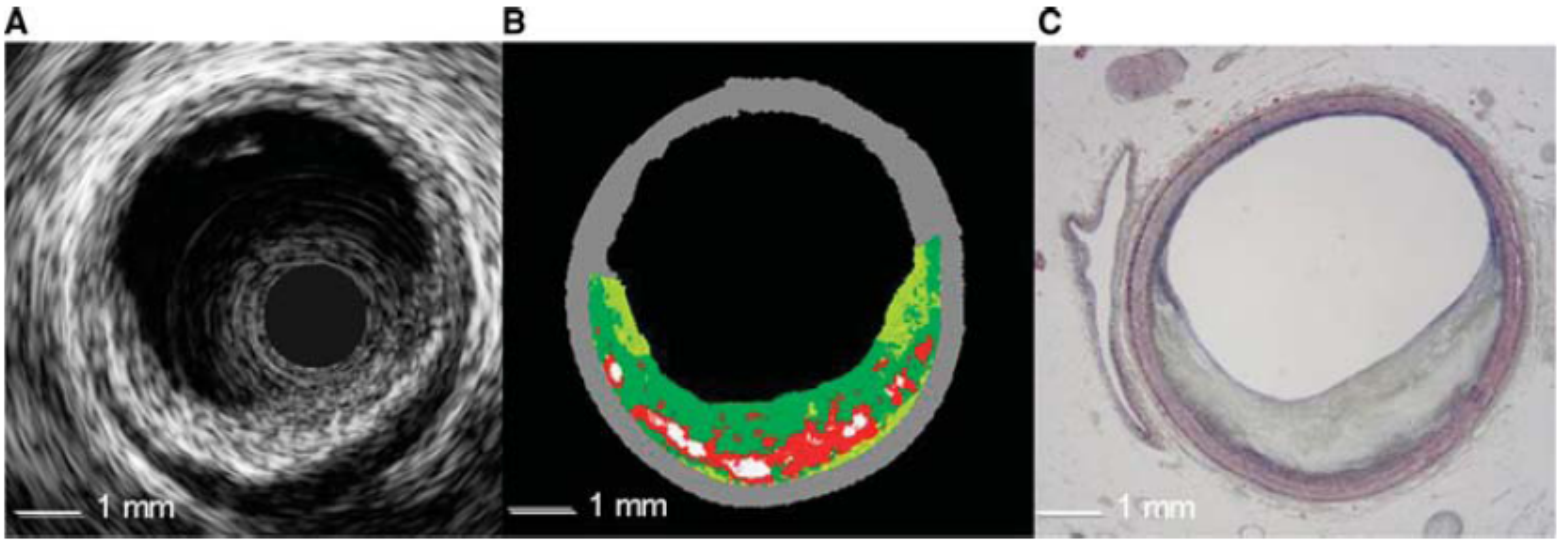


Fig. 1. Schematic presentation of the scoring system used for qualitative evaluation of the total systemic vascular ultrasonography score: sites measured by systemic vascular ultrasonography (A), method of scoring (B).

ECO Intravascular en directo

Histología Virtual

Histología real



(A) Shows a greyscale image. (B) Depicts a VH image created using the Revolution 45-MHz IVUS catheter, which is cu
ent by Volcano. This plaque is classified as a fibroatheroma as it has a visible fibrous cap covering a more than 10% confl
Shows the corresponding histological section.

European Heart Journal (2010) **3**, 2456–2469
doi:10.1093/eurheartj/ehq280

REVIEV

LOGIA:
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squerra

CAPs Les Corts Casanova Comte Borrell

Nuestra experiencia en Ecografía portátil y Enfermedad Cardiovascular…

THE JOURNAL REPORT: HEALTH-CARE INNOVATIONS

Medicine on the move

New mobile devices can help improve treatments

Clockwise from left: GE Healthcare; GlobalMedia; EarlySense

Vscan portable ultrasound device (at left); TransportAV wireless ambulance-monitoring system (top right); and the EverOn patient-monitoring system (bottom right)

"*Estetoscopio Ultrasónico*"

European Journal of Echocardiography (2011) **12**, 665–670
doi:10.1093/ejechocard/jer108

Feasibility and reliability of point-of-care pocket-sized echocardiography

Garrett Newton Andersen[1,2]*, Bjørn Olav Haugen[2,3], Torbjørn Graven[1], Øyvind Salvesen[4], Ole Christian Mjølstad[2,3], and Håvard Dalen[1,2]

[1]Levanger Hospital, Nord-Trøndelag Health Trust, Levanger, Norway; [2]MI Laboratory, Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Box 8905, 7491 Trondheim, Norway; [3]Department of Cardiology, St Olavs Hospital/Trondheim University Hospital, Trondheim, Norway; and [4]Department of Canc Research and Molecular Medicine, Norwegian University of Science and Technology, Trondheim, Norway

Table 5 Sensitivity, specificity, positive, and negative predictive value of point-of-care pocket-sized echocardiography to detect pathology compared with reference method

To detect:	$n_{pathology}$ (n_{total})	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
At least moderate LV dysfunction	35 (108)	97	99	97	99
Any LV regional dysfunction	35 (108)	97	99	92	96
Any RV dysfunction	10 (106)	90	99	82	98
Any dilatation of the left atrium	69 (107)	81	68	85	73
Any abdominal aortic aneurysms	7 (67)	100	100	100	100
Any pleural effusion[1]	14 (85)	93	98	87	97
Any pericardial effusion	9 (108)	89	99	100	100
At least moderate aortic stenosis	8 (106)	63	100	100	97
At least moderate aortic regurgitation	6 (106)	83	99	83	99
At least moderate mitral regurgitation	14 (107)	93	99	93	99
At least moderate tricuspid regurgitation	8 (108)	88	98	78	98

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FASE 1
VALIDACIÓN DEL INSTRUMENTO (VScan)

FASE 2
IMPLEMENTACIÓN EN PRÁCTICA CLÍNICA REAL

SCREENING PROGRAMME FOR ABDOMINAL AORTIC ANEURYSM AND ABDOMINAL AORTIC ATHEROSCLEROSIS BY HAND-HELD-ULTRASONOGRAPHY IN PRIMARY HEALTH CARE

Antoni Sisó- Almirall, M.D., Ph.D.[1], Rosa Gilabert Solé M.D., Ph.D [2], Concepció Bru Saumell M.D., PhD. [2], Belchin Adriyanov Kostov MSc [1] , Minerva Mas Heredia M.D. [1], Laura Sebastián Montal M.D. [1], Jaume Benavent Àreu M.D. [3].

[1]Primary Care Research Group, Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Centre d'Atenció Primària - Les Corts (AS-A, BAK, MMH, LSM), Consorci d'Atenció Primària de Salut l'Eixample (CAPSE), Barcelona, Spain. [2]Servei de Radiodiagnòstic, Centre de Diagnòstic per la Imatge, Hospital Clínic and IDIBAPS, University of Barcelona, Spain (RGS, CBS). [3]Director d'Afers Assistencials, Catalan Institute of Health, Generalitat de Catalunya (JBA).

Descriptive and pilot study that follows prospectively a cohort of **men over 50** attended in **primary health care** center who are **active smokers, former smokers, or hypertensive** patients. GP completed an **ultrasonography training** performed by experienced radiologists using classical ultrasound equipment and hand-held ultrasound (VScan). All images and videos recorded for each patient will be evaluated by a radiologist in order to establish the variability in the interpretation of images **between GP and radiologist**. *Kappa* index was calculated to study the agreement on the presence or absence of AAA and AA-At.

II JORNADA D'ATENCIÓ COMPARTIDA EN ENDOCRINOLOGIA:
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AIS Barcelona Esquerra

Screening for Abdominal Aortic Aneurysm: A Best-Evidence Systematic Review for the U.S. Preventive Services Task Force

Craig Fleming, MD; Evelyn P. Whitlock, MD, MPH; Tracy L. Beil, MS; and Frank A. Lederle, MD

En el año 2005 la US Preventive Task Force (***Ann Int Med 2005***) otorgó como recomendación clase B el cribado del aneurisma de aorta abdominal (AAA) con ecografía en hombres de 65-75 años fumadores o exfumadores, incluyéndose desde entonces como prueba de cribado del Medicare.

Atherosclerotic Cardiovascular Disease Screening in Adults

American College of Preventive Medicine Position Statement on Preventive Practice

Lionel S. Lim, MD, MPH, Nowreen Haq, MD, MPH, Shamail Mahmood, MD, Laura Hoeksema, MD, MPH, and the ACPM Prevention Practice Committee*

ACPM recommends one-time AAA screening in men aged 65–75 years who have ever smoked. Routine AAA screening in women is not recommended

(Am J Prev Med 2011;40(3):380–381) © 2011 American Journal of Preventive Medicine

Screening for abdominal aortic aneurysm (Review)

Cosford PA, Leng GC, Thomas J

THE COCHRANE COLLABORATION®

Revisión Cochrane 2007 justifica el cribado: demuestra disminución significativa de la mortalidad por AAA en hombres (**OR 0.60**; 95% CI 0.47 to 0.78), pero no en mujeres (OR 1.99; 95% CI 0.36 to 10.88).

La historia natural del AAA (silente) conduce a 3 posibles complicaciones:

- **ruptura del AAA**
- **formación de trombos en luz vascular**
- **compresión de órganos adyacentes**.

Otro factor de riesgo adicional para la ruptura es el **crecimiento rápido** en AAA < de 5,5 cm. La **ecografía abdominal** es la prueba de cribado del AAA en todos los países en donde existe un programa.

Tamaño	Riesgo Ruptura (anual)
< 4 cm	0,5%
4,0 a 4,9 cm	1%
5,0 a 5,9 cm	11%
6,0 a 6,9 cm	26%

Overview of the randomized studies of ultrasound screening for abdominal aortic aneurysms (AAA) (1)

	MASS (UK)	Western Australia	Viborg (Denmark)	Chichester (UK), men	Chichester (UK), women
Age (years)	65–74	65–83	65–73	65–80	65–80
Sex	Men	Men	Men	Men	Women
Randomized	67 800	38 704	12 658	6433	9342
Follow-up (years)	7	3.6	9.6	15	5
Screening achieved	80%	63%	77%	73%	65%
Prevalence of AAA >3 cm	4.9%	7.2%	4.0%	7.6%	1.3%

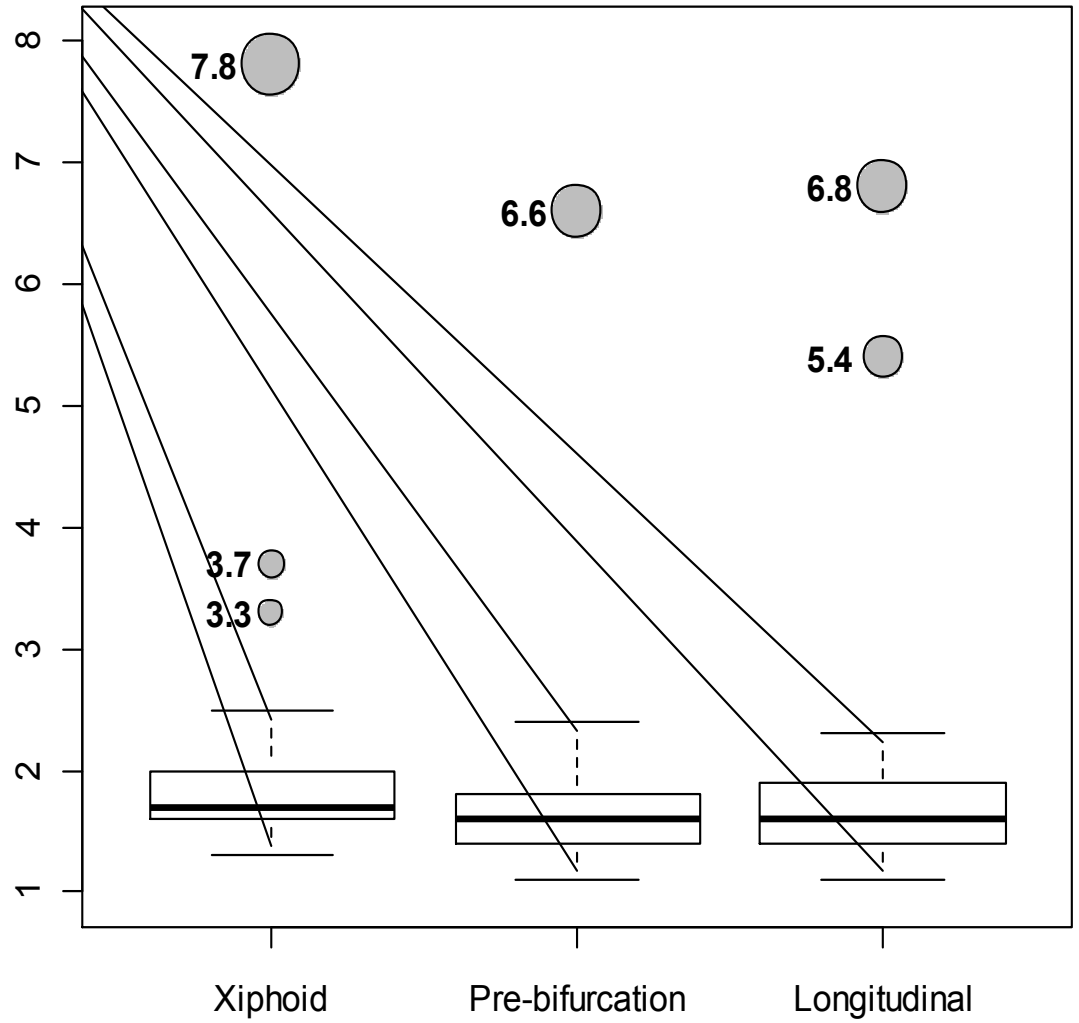
Number of patients who need to be screened in order to prevent one disease-specific death

	NNS*	Time period
Fecal occult blood test	808	8.5 years
Colonoscopy	862	13 years
Mammography (women aged 50 to 69 years)	Approx 2000	10 years
Ultrasound of the abdominal aorta (men aged 65 to 80 years)	350	7–15 years

RESULTADOS

Basal Features (n=106)	
Age	68.85 (7.67)
BMI	27.63 (3.94)
Abdominal perimeter	101.81 (10.14)
Physical exercise	
Sedentary	29 (27.8%)
Moderate	40 (38.5%)
Optimum	35 (33.7%)
Smoker	
Active Smoker	17 (16.0%)
Former Smoker	51 (48.1%)
Non-smoker	38 (35.9%)
Hypertension	87 (82.1%)
Hypercholesterolemia	59 (55.7%)
Diabetes Mellitus	31 (29.3%)
Chronic Kidney Disease	12 (11.9%)
Myocardial Infarction	12 (11.3%)
Angina	12 (11.3%)
Stroke	9 (8.5%)
Peripheral Vascular Disease	8 (7.5%)

AAA → 6 casos (6/102) = 5,88%



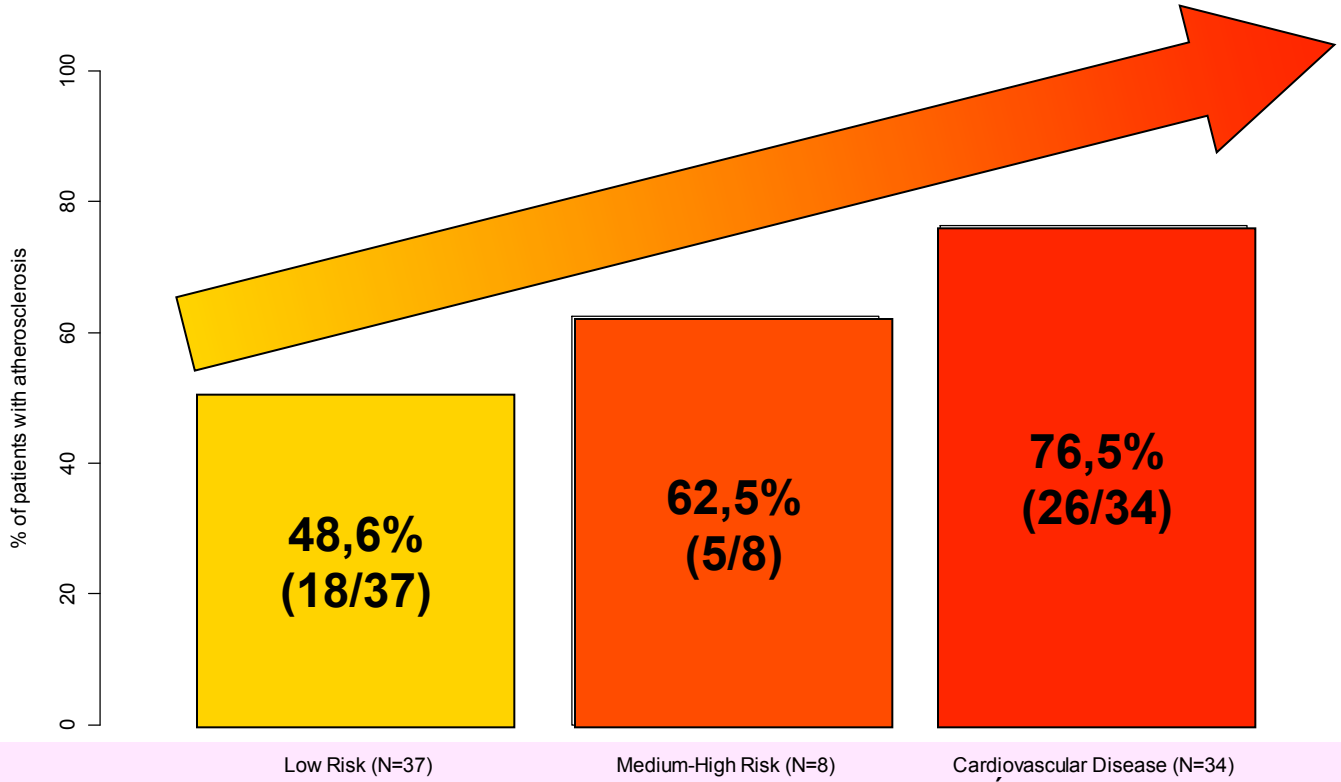
- 1 caso ha sido operado sin complicaciones.
- 2 casos no fueron operados: (1) por EPOC severo; (2) por enfermedad de Alzheimer.
- 3 casos son objeto de seguimiento ecográfico.
- En todos los casos el diagnóstico se confirmó por TC.
- 4 de 6 casos eran fumadores activos.

AA-At

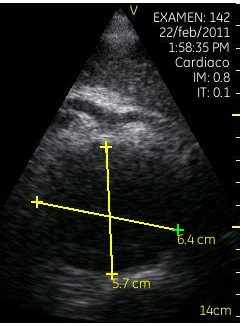
Table 2. Risk factors of AA-At

Variable	With AA-At (N=35)	Without AA-At (N=32)	P-value
Age, years	70.3 (7.0)	69.5 (8.7)	-
Smokers			-
Current smokers	4 (11.4)	7 (21.9)	
Former smokers	19 (54.3)	12 (37.5)	
Non smokers	12 (34.3)	13 (40.6)	
Hypertension	30 (85.7)	25 (78.1)	-
BMI ≥ 25 kg/m^2 (1)	23 (69.7)	25 (78.1)	0.623
Physical exercise(1)			0.948
Sedentary	8 (23.6)	8 (25.0)	
Moderate	13 (38.2)	13 (40.6)	
Optimum	13 (38.2)	11 (34.4)	
Hypercholesterolemia	22 (62.9)	12 (37.5)	**0.051**
Diabetes Mellitus	12 (34.3)	4 (12.5)	**0.047**
HDL-C < 45 mg/dL(1)(2)	15 (45.5)	11 (35.5)	0.577
Triglyceride ≥ 150 mg/dL(1)(2)	9 (27.3)	2 (6.5)	**0.044**
Chronic Kidney Disease(1)	3 (9.1)	4 (12.5)	0.708
Cardiovascular Disease(3)	12 (34.3)	7 (21.9)	0.290
Myocardial Infarction	4 (11.4)	2 (6.2)	0.674
Angina	4 (11.4)	3 (9.4)	0.900
Stroke	1 (2.9)	2 (6.3)	0.602
Peripheral Vascular Disease	3 (8.6)	1 (3.1)	0.615

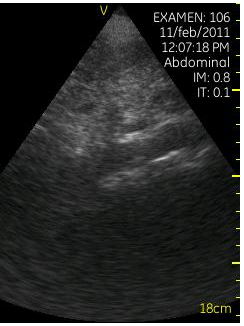
Table 2. Results of multivariate regression analysis for independent risk factors of AA-At					
Variable	Estimate	Std. Error	P	**OR**	95% CI
Hypercholesterolemia	0.96	0.52	0.064	**2.61**	0.92 - 7.39
Diabetes Mellitus	1.21	0.66	0.066	**3.35**	0.89 - 12.55



CONCORDANCIA y ANÁLISIS DE SENSIBILIDAD



AAA

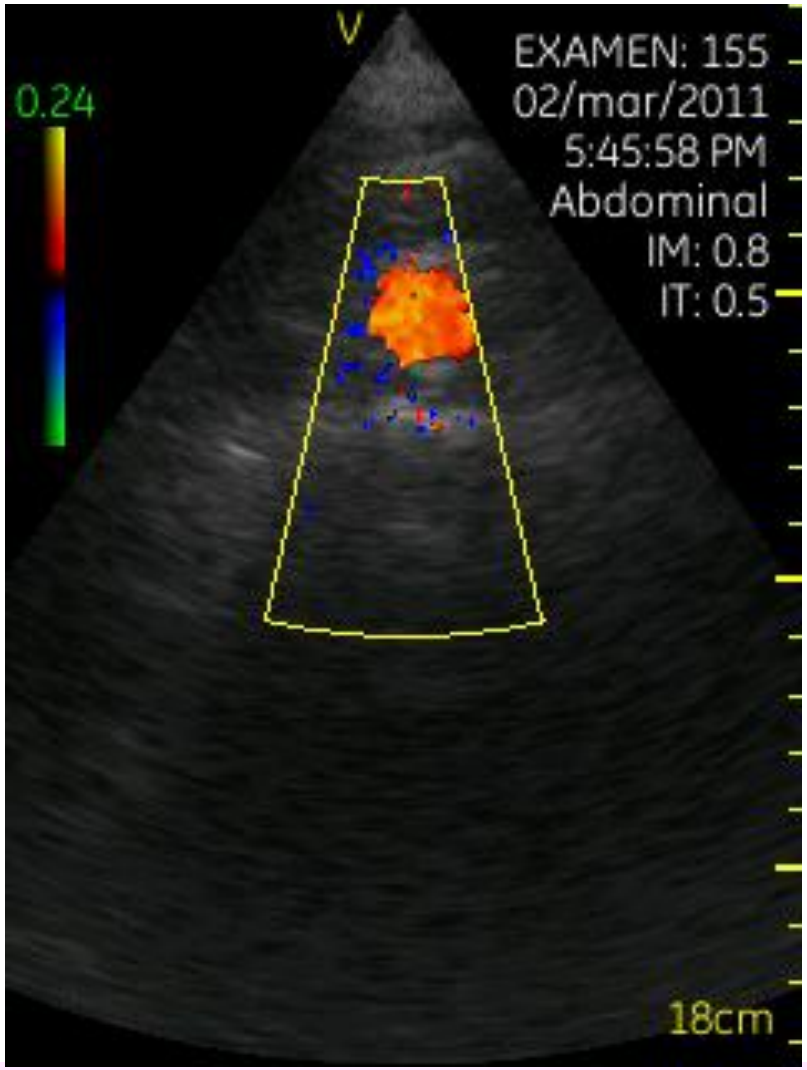


AA-At

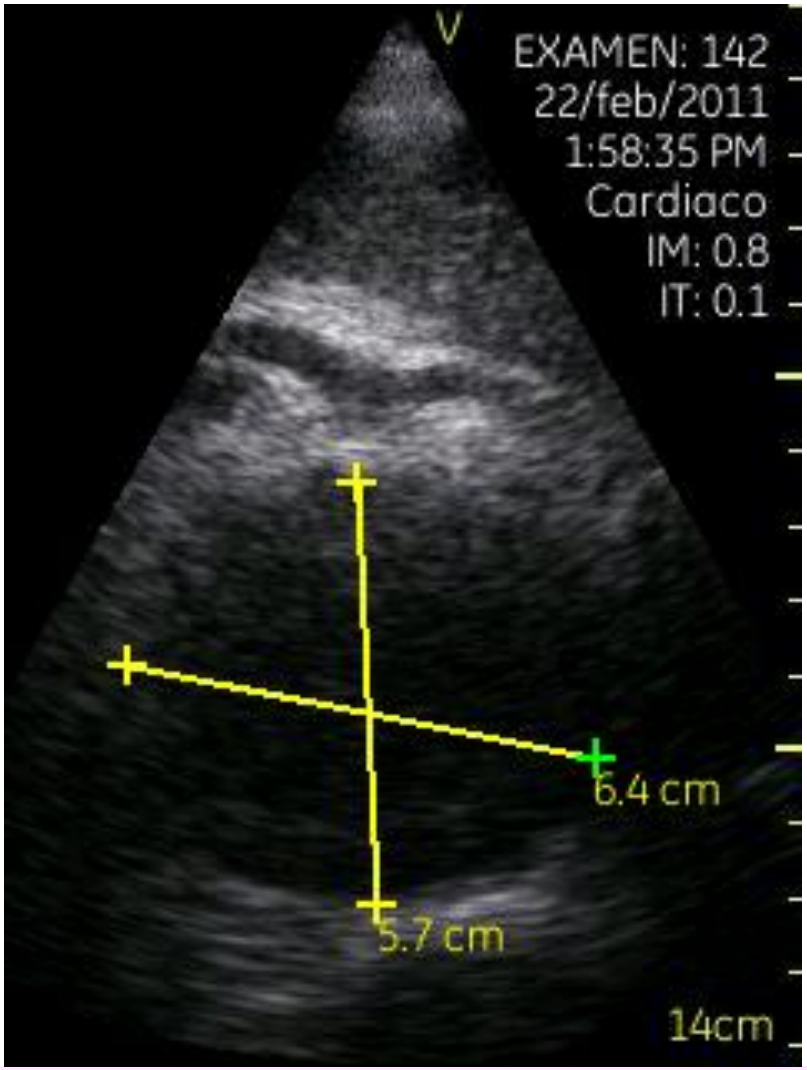
Concordancia (Kappa)	Sensibilidad	Especificidad
1,0 (absoluta)	100%	100%
0,43 (moderada)	89,7%	57,1%

EJEMPLO 1: AAA

Aorta Normal
sección
transversal

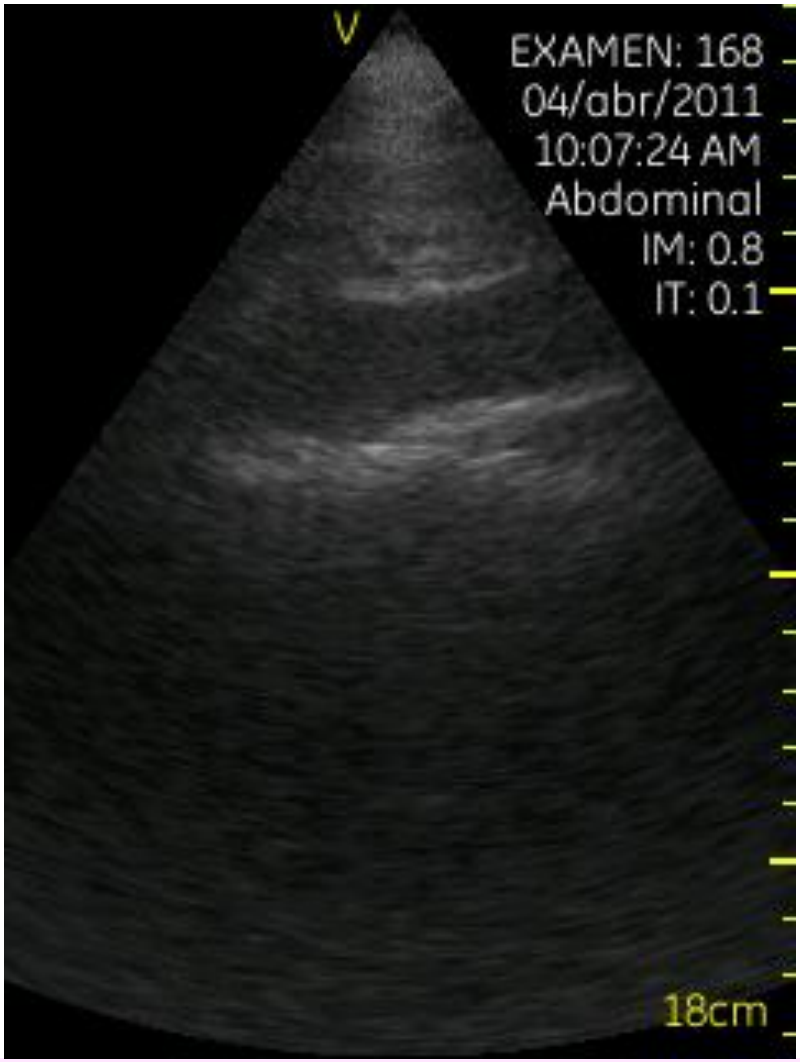


AAA
sección
transversal

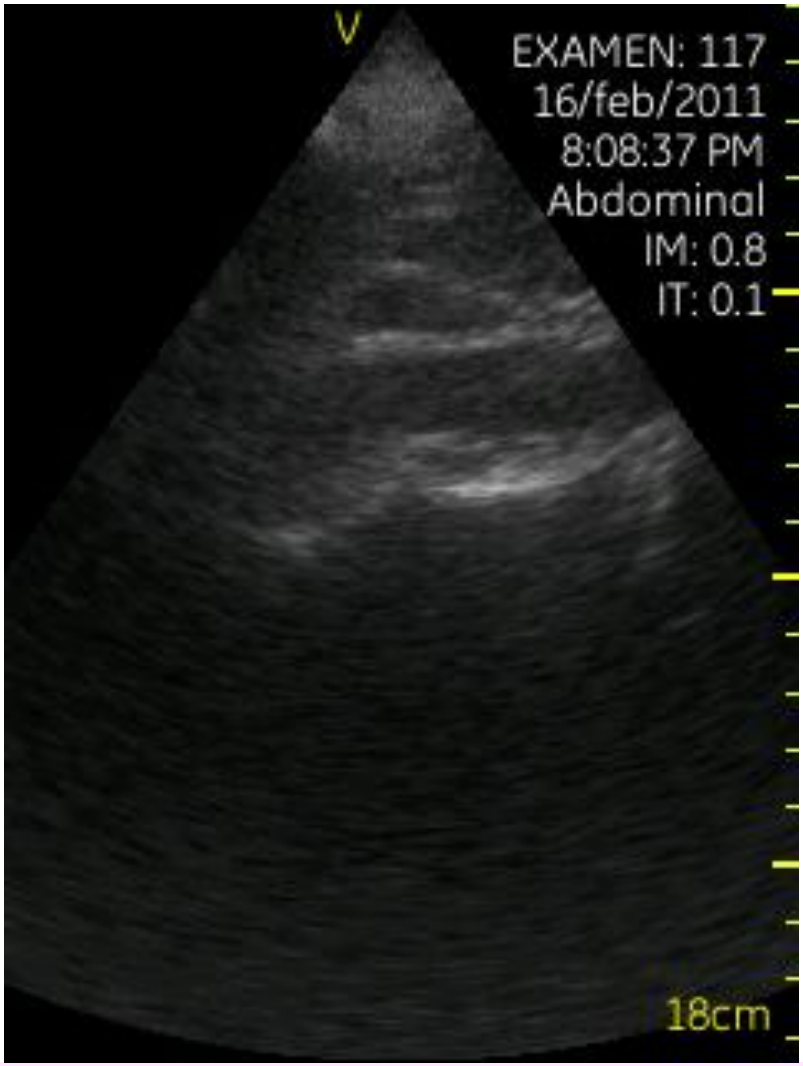


EJEMPLO 2: AA-At

Aorta Normal
sección
longitudinal



AA-At
sección
longitudinal



Medtronic

ERP Net

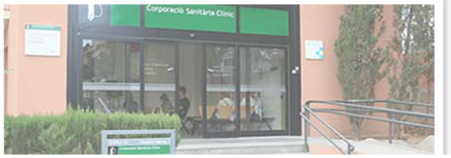
External Research Program
for Investigator-Initiated Trials

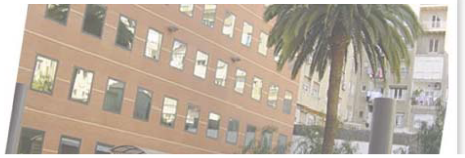
Screening Programme for Abdominal Aortic Aneurysms by Hand-Held-Ultrasonography in Primary Health Care

PI, Antoni Sisó Almirall MD PhD.
Co-Investigators:
Marta Navarro González MD.
Daniel Cararach Salami MD.
Alfonso Pérez Jiménez MD.
Belchin Adriyanov Kostov MSc.
Rosa Gilabert Solé MD. PhD.
Concepció Bru Saumell MD. PhD.
Vicenç Riambau Alonso MD. PhD.
Laura Sebastián Montal MD.
Jaume Benavent Àreu MD.

CAPSE (EAP Les Corts, EAP Casanova, EAP Borrell) y Servicios de Radiodiagnóstico y Cirugía Vascular, Hospital Clínic.

CAPs Les Corts Casanova Comte Borrell





Gràcies per la vostra atenció

asiso@clinic.ub.es