Morbilidad asociada a Hepatitis C: Efecto de la erradicación del virus

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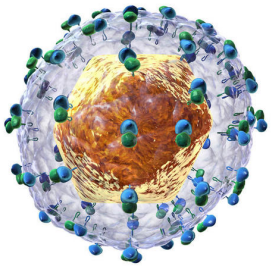


Hepatis C Virus (HCV)

Causa de:

- ✓ **Progresión a cirrosis**
- ✓ **Desarrollo de hepatocarcinoma**
- ✓ **Necesidad de THO**

Desórdenes inmunológicos

Desórdenes neurológicos

Desórdenes metabólicos

El VHC se asocia también a morbi-mortalidad de origen extrahepático, incluyendo Diabetes Mellitus, linfomas, crioglobulinemia, y riesgo cardiovascular

Hepatitis C y riesgo cardiovascular

- ✓ Aparición de RI, DM y esteatosis *(Romero-Gómez et al, JHepatol 2008)*
- ✓ Aterosclerosis carotidea *(Adinolfi et al., World J Gastroenterol 2014)*
- ✓ Enfermedad arterial coronaria *(Alyan et al., Circulation J 2008)*
- ✓ Hipertensión arterial *(Tomiyama et al., Atherosclerosis 2003)*
- ✓ Mayor prevalencia de enfermedad arterial periférica (Hsu YH et al., hepatol 2015)

Incremento de la tasa de mortalidad cardiovascular tras ajustar por factores de riesgo vascular tradicionales (Younossi et al., Aliment Pharmacol Ther2013).

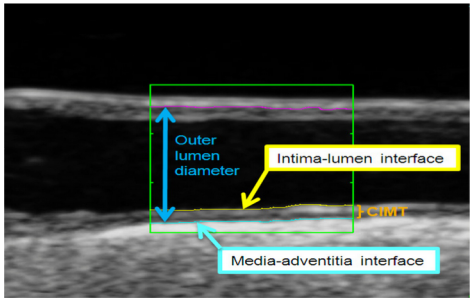
Ampuero J, Romero-Gómez M. Assessing cardiovascular risk in hepatitis C: An unmet need. World J Hepatol. 2015:8;7:2214-9.

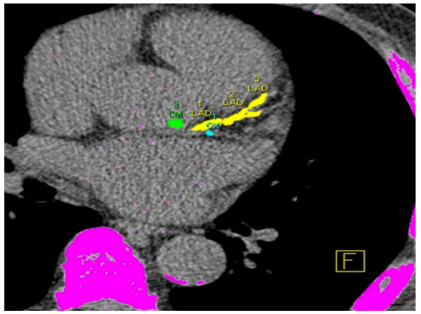
Assessing CV risk

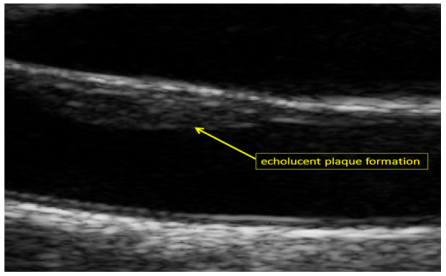
- Liver evaluation
  - Liver dysfunction severity and prognosis
  - Confirming etiology
  - Treatment of choice
- Surgery evaluation
  - Technical difficulties
- **Heart evaluation:**
  - **Subclinical atherosclerosis**
  - **Coronary artery disease**
- Anesthetic evaluation
  - Surgery risk
  - Portopulmonar hypertension

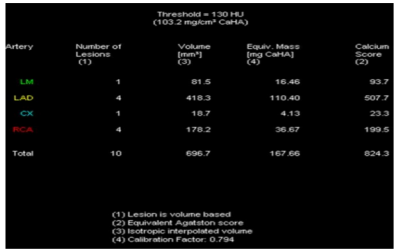
Looking for subclinical atherosclerosis markers

Carotid Intima Media Thickness | **Calcium score**









> 1mm
age(years)/100 + 0.2 mm

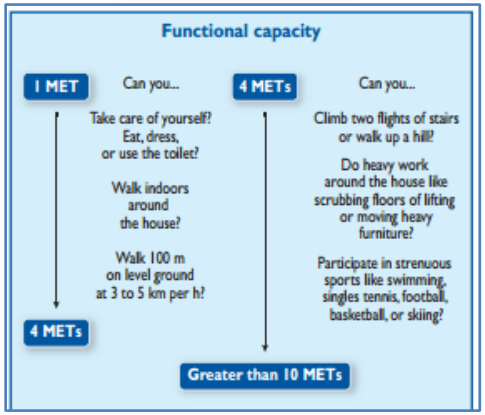
> 100 Unit

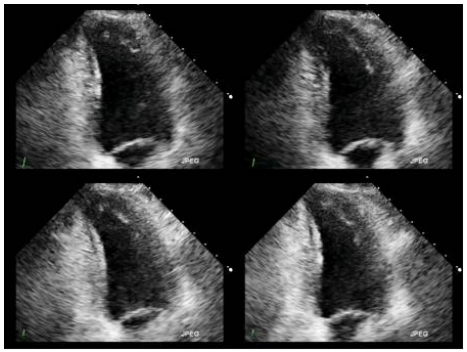
Anticipating CV events after LT: a hard task

EKG → Echocardio-graphy → Calcium score CT → DSE → Coronary angiography

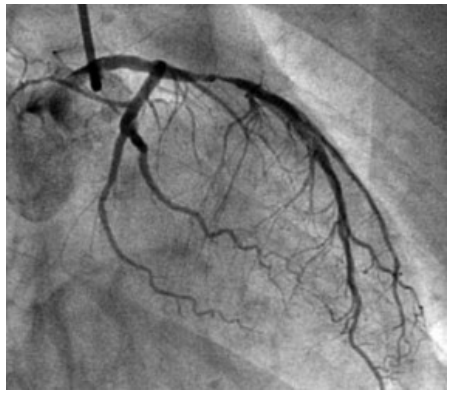
Raised CV risk > 20% /10y

Subclinical atherosclerosis

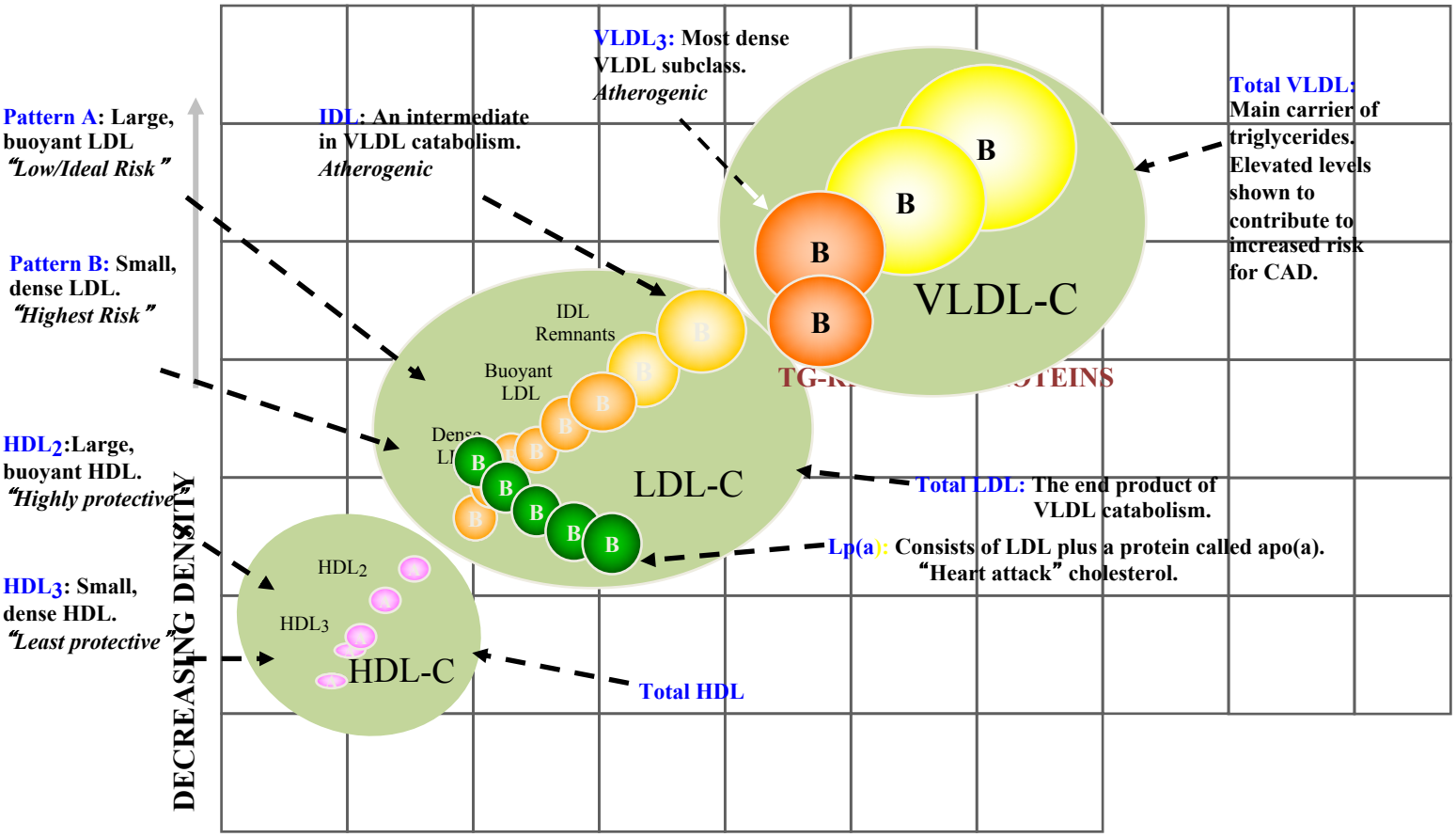




- Ischaemic heart disease (angina pectoris and/or previous myocardial infarction[a])
- Heart failure
- Stroke or transient ischaemic attack
- Renal dysfunction (serum creatinine >170 µmol/L or 2 mg/dL or a creatinine clearance of <60 mL/min/1.73 m^2)
- Diabetes mellitus requiring insulin therapy



Lipoproteins Have Variable CVD Risk Profile



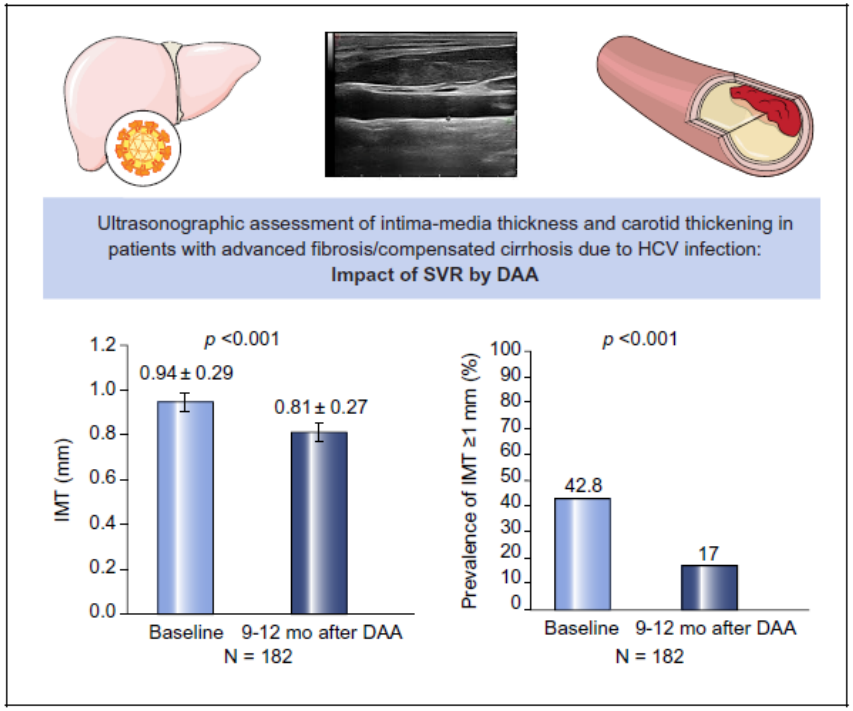
B = All Lipoproteins containing an $ApoB_{100}$ (non-HDL Cholesterol)
A = All Lipoproteins containing an ApoAI &/or AII (HDL Cholesterol)

Research Article
Viral Hepatitis

JOURNAL
OF HEPATOLOGY

Hepatitis C virus eradication by direct-acting antiviral agents improves carotid atherosclerosis in patients with severe liver fibrosis

	(N = 182)
Male gender (%)	56
Age (years)	63.1 ± 10.4
Age >65 years (%)	47.3
BMI (kg/m^2)	25.6 ± 3.7
BMI ≥30 (kg/m^2)	14.3
Blood glucose (mg/dl)	103.5 ± 23.2
Type 2 diabetes (%)	19.8
Arterial hypertension (%)	41.8
Total cholesterol (mg/dl)	159.9 ± 29.5
Smoking (%)	35.2
IMT (mm)	0.94 ± 0.29
IMT ≥1 mm (%)	42.9
Carotid plaques (%)	42.9
ALT (IU/L)	81.9 ± 49.5
PLT (10^3/μl)	153.3 ± 64.3
HCV genotype 1/1a/1b/2/3/4	0.5/8.2/83.4/1.1/2.2/1.6
HCV RNA (Log)	5.8 ± 0.6
Cirrhosis (%)	65.9



Petta S et al., Journal of Hepatology 2018

WILEY AP&T Alimentary Pharmacology & Therapeutics

Subclinical cardiovascular damage in patients with HCV cirrhosis before and after treatment with direct antiviral agents: a prospective study

TABLE 1 Baseline demographic and clinical features of the HCV-related cirrhotic patients and controls

	HCV-related cirrhotic patients (n = 39)	Controls (n = 39)	*P* value
Age (y ± SD)	60 (48-70)	59 (48-67)	0.104
Male gender, n (%)	16 (41.02%)	17 (43.58%)	0.999
Mean body mass index kg/m^2 ± SD	25.51 ± 3.41	26.18 ± 4.08	0.538
Arterial hypertension n (%)	17 (43.58%)	16 (41.02%)	0.999
Type 2 diabetes n (%)	11 (28.20%)	8 (20.5%)	0.598
Smoking n (%)	5 (12.82%)	1 (2.56%)	0.226
Dyslipidemia n (%)	2 (5.13%)	5 (12.82%)	0.428
Alanine aminotransferase, UI/L	74.5 (43-120)	n.e	—
Platelet count, 10^3 × µ/L	111 (87-143)	n.e	—
Liver stiffness, Kpa	19.7 (15.4-30.5)	n.e	—
High viral load >800 000 UI/L (%)	14 (35.89)	n.e	—
HCV genotype		n.e	—
1 (%)	32 (82.5%)		
2	4 (10%)		
3	2 (5%)		
4	1 (2.5%)		
Oesophageal varices, n (%)	12 (31%)	n.e	—
Longitudinal spleen diameter (cm)	13.5 (11.9-14.8)	n.e	—
Portal vein diameter (cm)	1,1 (1-1.2)	n.e	—
MELD	7 (6-8)	n.e	—

MELD: Model for End-stage Liver Disease.

TABLE 4 Laboratory, echocardiographic features and arterial stiffness parameters of the HCV-related cirrhotic patients at basal and at follow-up after DAAs treatment

	Baseline HCV-related cirrhotic (n = 39)	Follow-up HCV-related cirrhotic (n = 32)	*P* value
Alanine aminotransferase, UI/L	74.5 (43-120)	24 (18-45)	<0.0001
Platelet count, 10^3 × µ/L	111 (87-143)	176 (101-195)	<0.0001
Liver stiffness, Kpa	19.7 (15.4-30.5)	16.7 (11-22.9)	<0.001
Longitudinal spleen diameter (cm)	13.5 (11.9-14.8)	13 (11.6-14.4)	0.301
Portal vein diameter (cm)	1.1 (1-1.2)	1.1 (1-1.2)	0.982
LVEDD (mm/m^2 ± SD)	25 (22,9-26)	24.4 (22.2-25.5)	0.617
LVEF (%)	58 (55-60)	58 (52-60)	0.767
LVEDV (mL/m^2)	51.5 (39.6-60.8)	48 (38-61)	0.839
IVS (mm ± SD)	10 (9-12)	10 (9-12)	0.940
PW (mm ± SD)	10 (9-11)	10 (0.8-1)	0.616
Left ventricle mass index (g/m^2)	108.1 (94.5-130)	109 (94-130)	0.940
Left atrial volume index (mL/m^2)	28.8 (21.9-34.8)	25.2 (21-31.5)	0.608
Right atrial volume index (mL/m^2)	17.9 (12.8-22.8)	18.1 (12-22)	0.809
PASP (mm Hg)	30 (28-34.1)	30 (28-34)	0.838
TAPSE (mm)	22 (21-24)	25 (22.5-25.5)	0.01
E'septal, cm/s	8.3 (6.5-9.0)	8.6 (6.8-9.0)	0.922
E'lateral, cm/s	10 (8.25-11)	11.5 (9.5-12.5)	0.001
E/E'm	7.7 (6.5-9.7)	7.8 (6.4-9.3)	0.44
Diastolic dysfunction (n/%)	24 (61.54%)	18 (56.25%)	0.834
Global longitudinal strain (GLS)%	−18.1 (16.3-20.5)	−19.1 (16.8-20.7)	0.899
β Stiffness index	12.4 (11.1-13.5)	11.5 (9.2-16.2)	0.386
Pulse-wave velocity (m/s)	8.6 (7.7-9.1)	8.5 (7.6-9.4)	0.748

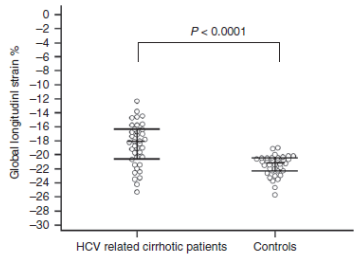


FIGURE 1 Global longitudinal strain (GLS %) values in patients with HCV cirrhosis −18.1 (16.3-20.5) as compared with controls −21.2 (20.4-22.3). Data are expressed as median and IQR (see Table 2)

TABLE 3 Univariate analysis to evaluate predictors of Global Longitudinal Strain reduction

	β	*P* value
Age	0.19	0.499
MELD	−0.113	0.688
Albumin	−0.234	0.148
Total bilirubin	−0.131	0.888
INR	−0.159	0.419
Platelets	−0.07	0.718
AST	−0.053	0.790
ALT	−0.050	0.799
Cirrhosis	−0.522	0.0001
Longitudinal spleen diameter	−0.185	0.478
Portal vein diameter	−0.178	0.292
Diabetes	−0.454	0.0001

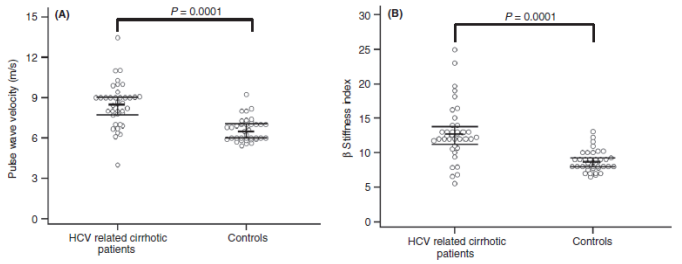


FIGURE 2 A, Pulse-wave velocity values in HCV-cirrhotic patients 8.6 (7.7-9.1) as compared with controls 6.6 (6.0-7.1). B, β stiffness index values in HCV cirrhotic patients 12.4 (11.1-13.5) as compared with controls 8.6 (8.0-9.2). Data are expressed as median and IQR (see Table 2)

Novo G et al., Aliment Pharmacol Ther 2018

Gastroenterology 2019;156:987–996

Direct-Acting Antiviral Therapy for HCV Infection Is Associated With a Reduced Risk of Cardiovascular Disease Events

Table 2. Incidence Rates for a CVD Event in Specific Subgroups

	Events, n	Incidence rate (95% CI) per 1000 patient-years of follow-up	*P* value[a]
For all evaluable persons (unadjusted)			
Untreated	2361	30.9 (29.6–32.1)	—
Treated overall	1239	20.3 (19.2–21.5)	<.0001
For all evaluable persons (adjusted)[b]			
Untreated	2361		
Treated overall	1239		
For all evaluable persons (adjusted)[b]			
Untreated	2361		
Treated with PEG +RBV	804		
Treated with DAA	435		
For those treated			
SVR	731		
No SVR	508		
By FIB-4 score at baseline			
Treated			
<1.25	335		
1.26–3.25	628		
>3.25	249		
Untreated			
<1.25	732		
1.26–3.25	1131		
>3.25	388		

[a]*P* value compared with the value in the first row of that group.
[b]Adjusted for baseline ASCVD score.

WHAT YOU NEED TO KNOW

BACKGROUND AND CONTEXT

Effect of new all-oral directing acting antiviral regimens (DAA) upon subsequent risk of cardiovascular disease (CVD) events is unclear.

NEW FINDINGS

DAA treatment was associated with a 43% reduction and pegylated interferon/ribavirin with a 22% reduction in risk of incident CVD events.

LIMITATIONS

The study population was predominantly male veterans. The retrospective, observational design decreases inference for cause and effect.

IMPACT

In addition to decreasing the risk of liver events in patients with HCV, DAA therapy may also decrease the risk of cardiovascular disease.

Table 3. Incidence Rates for a CVD Event in Specific Subgroups, by Type of Event

	Cardiac events, n	Incidence rate (95% CI) per 1000 patient-years of follow-up	*P* value[a]	Str ever					
For all evaluable persons (unadjusted)									
Untreated	1202	14.9 (14–15.7)		3					
Treated overall	638	10.1 (9.31–10.9)	<.0001	1					
For all evaluable persons (adjusted)[b]									
Untreated	1202	14.73 (13.9–15.57)		384	4.58 (4.12–5.04)		775	9.32 (8.67–9.98)	
Treated overall	638	10.29 (9.49–11.09)	<.0001	145	2.26 (1.89–2.64)	<.0001	456	7.38 (6.7–8.05)	<.0001
For all evaluable persons (adjusted)[b]									
Untreated	1202	14.72 (13.88–15.55)		384	4.56 (4.11–5.02)		775	9.31 (8.65–9.96)	
Treated with PEG + RBV	400	10.9 (9.74–12.05)	<.0001	105	2.76 (2.16–3.35)	<.0001	299	8.3 (7.29–9.32)	.11
Treated with DAA	238	8.98 (7.78–10.19)	<.0001	40	1.5 (1.01–1.99)	<.0001	157	5.71 (4.77–6.66)	<.0001
For those treated									
SVR	380	9.63 (8.66–10.6)		82	2.04 (1.6–2.48)		269	6.78 (5.97–7.59)	
No SVR	258	10.9 (9.54–12.2)	.15	63	2.58 (1.95–3.22)	.18	187	7.85 (6.73–8.98)	.14

Table 4. Factors Associated With a Diagnosis of an Incident CVD Event (Multivariable Cox Regression Analysis)

	HR	95% CI	*P* value
Age per 10-y increase	1.37	1.3–1.44	<.0001
Race			
White (comparator)	1		
Black	1.09	1.01–1.19	.03
Hispanic	0.85	0.70–1.03	.11
Others or unknown	0.82	0.74–0.91	.0002
Male sex (vs female sex)	1.65	1.33–2.05	<.0001
Alcohol abuse or dependence	1.1	1.01–1.19	.03
Drug abuse or dependence	1.09	1.00–1.19	.04
Smoking			
Never (comparator)	1		
Former	1.06	0.93–1.21	.38
Current	1.43	1.28–1.60	<.0001
Unknown	1.24	1.1–1.39	.001
Body mass index >30 kg/m^2 (vs ≤30 kg/m^2)	1.30	1.21–1.39	<.0001
Diabetes	1.65	1.47–1.86	<.0001
Hypertension	1.71	1.58,1.86	<.0001
Dyslipidemia	1.29	1.20–1.38	<.0001
Fibrosis			
FIB-4 score <1.25 (comparator)	1		
FIB-4 score 1.26–3.25	1.08	1.00–1.17	.05
FIB-4 score >3.25	1.46	1.31–1.62	<.0001
CKD stage			
eGFR ≥90 (comparator)	1		
CKD 2	0.99	0.90–1.08	.78
CKD 3	1.47	1.31–1.66	<.0001
CKD 4–5	1.73	1.48–2.02	<.0001
HCV RNA, per $\log_{10}$ increase	1	0.99–1.02	.98
HCV treatment			
Untreated (comparator)	1		
PEG + RBV	0.78	0.71–0.85	<.0001
Any DAA	0.57	0.51–0.65	<.0001

CKD, chronic kidney disease; eGFR, estimated glomerular filtration rate.

Adeel A. Butt et al., Gastroenterology 2019

International Journal of Cardiology 271 (2018) 296–300

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International Journal of Cardiology

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Interferon- and ribavirin-free therapy with new direct acting antivirals (DAA) for chronic hepatitis C improves vascular endothelial function

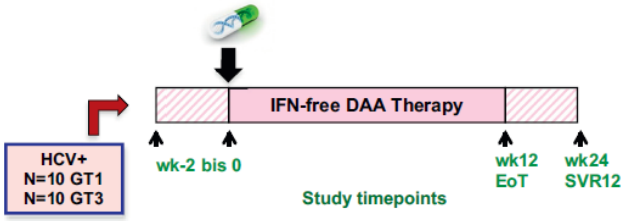
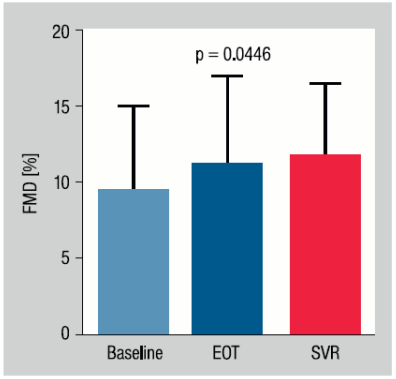
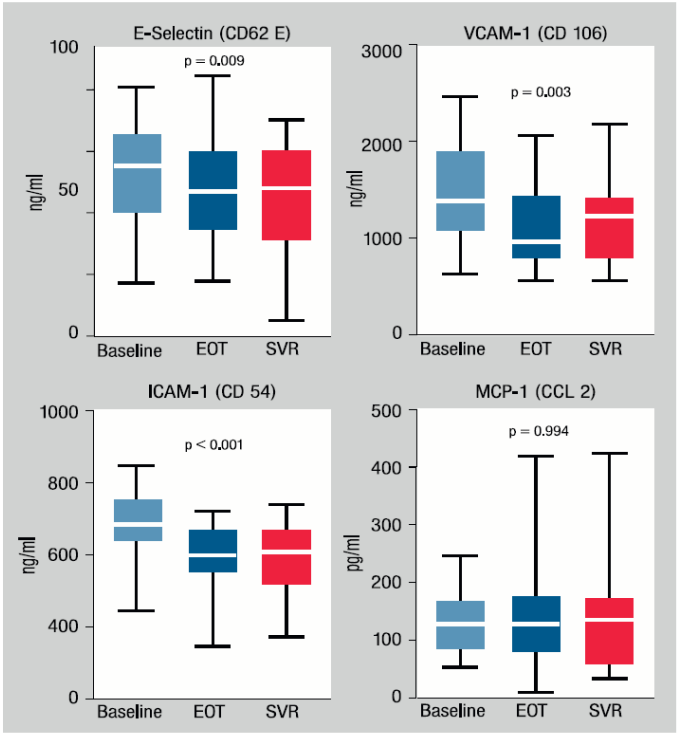


Table 1
Patient characteristics.

	Total	GT1	GT3	Unit
NN	2200	1010	1100	
Age	50.6 ± 8.0	51 ± 10.4	50.1 ± 5.2	years
Gender (male)	11	6	5	
BMI	28.1 ± 5.7	27.5 ± 3.8	28.6 ± 7.4	kg/m^2
Smoking	10	3	7	
BNP	22.8 ± 28.6	12.0 ± 14.9	38.1 ± 37.1	
Previous antiviral treatment	6	5	1	
Bilirubine	0.69 ± 0.31	0.66 ± 0.17	0.72 ± 0.41	mg/dl
Creatinine	0.77 ± 0.09	0.78 ± 0.11	0.76 ± 0.06	mg/dl
ALT	99.1 ± 53.9	77.3 ± 29.5	120.8 ± 64.8	U/l
AST	67.8 ± 37.4	51.0 ± 17.8	84.6 ± 44.8	U/l
Albumine	38.5 ± 2.5	39.4 ± 2.0	37.6 ± 2.8	g/l
LDL	97.6 ± 28.5	102.7 ± 18.5	93.1 ± 35.8	mg/dl
HDL	51.6 ± 10.7	56.8 ± 11.7	46.9 ± 7.6	mg/dl
HbA1c	5.51 ± 0.33	5.50 ± 0.44	5.52 ± 0.24	%
CRP	1.72 ± 2.16	1.00 ± 0.71	2.44 ± 2.89	
Ferritin	180.9 ± 336.7	115.9 ± 68.6	239.4 ± 463.2	ng/ml
Transferrin saturation	28.4 ± 12.7	26.4 ± 12.0	29.9 ± 13.6	%
Iron	121.2 ± 45.4	121.0 ± 23.7	121.3 ± 57.4	µg/dl
Liver stiffness (Fibroscan)	6.34 ± 2.88	5.56 ± 1.39	7.21 ± 3.88	kPa
APRI	0.96 ± 0.92	0.57 ± 0.37	1.32 ± 1.13	

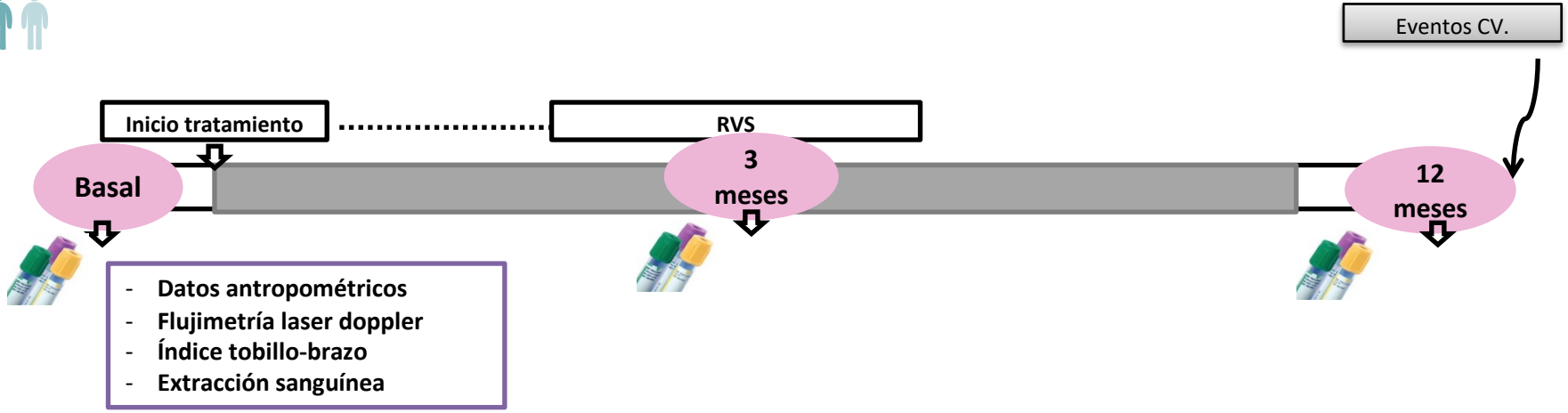
BMI = Body mass index; HCV = hepatitis C virus; ALT = Alanin aminotransferase; AST = Aspartat aminotransferase; LDL = low-density lipoprotein,; HDL = high density lipoprotein, CRP = c-reactive preotein; APRI = Aspartat-aminotransferase platelet ration index;





Frank P. Schmidt et al., Int J Cardiol 2018

Metodología



Evaluación del RCV:

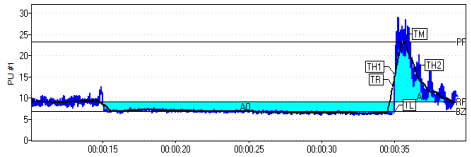
A) PERFIL LIPÍDICO COMPLETO

B) ATEROSCLEROSIS SUBCLÍNICA.

- Índice tobillo brazo (ITB)

C) DISFUNCIÓN ENDOTELIAL

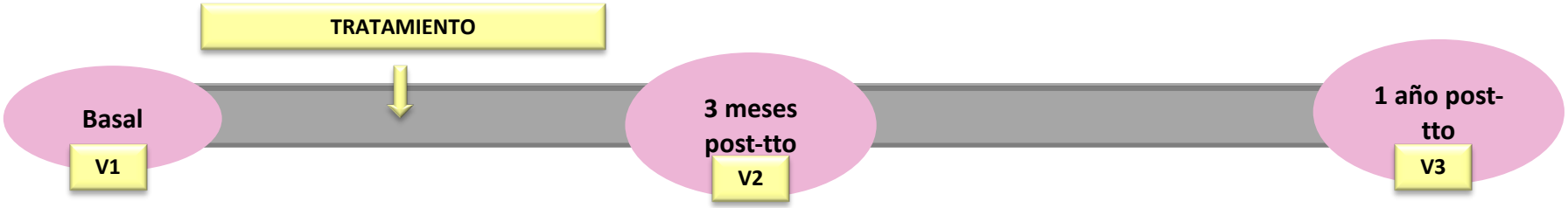
- Flujimetría Láser Doppler
- Marcadores solubles en plasma



D) MARCADORES DE DAÑO ENDOTELIAL Y CELULAR

- ADN circulante
- Micropartículas apoptóticas

DATOS ANTROPOMÉTRICOS. PRESIÓN ARTERIAL



	Basal	12 weeks (SVR)	1 year FU	p
IMC (kg/m2)	26,9±3,4	26,8±3,9	26,9±3,9	0,631
TAS (mmHg)	127,2±18,1	131,5±21,2	129,3±16,2	0,299
TAD (mmHg)	77,9±11,2	78,7±11,4	79,5±10,5	0,676
TAM (mmHg)	93,9±12.7	93,3±13,4	96,1±12,8	0,384
P abd. (cms)	94,7±11,1	94,3±11,1	93,4±11,2	0,134
P cadera (cms)	103,7±8,9	103,1±8,9	103±8.5	0,572

PERFIL DE FUNCIÓN HEPÁTICA, METABÓLICO Y RIESGO CARDIOVASCULAR

	Basal	12 weeks (SVR)	1 Year FU	p
Platelets (10^9/L)	171.1±78.9*†	192.2±92.3*	192.9±75.9†	**<0.001**
INR	1.05[0.9-1.1]*	1.02[0.9-1.1]	1[0.9-1.1]*	**<0.001**
Bilirubin (mg/dL)	0.76±0.4*†	0.62±0.3*‡	0.55±0.3†‡	**<0.001**
AST (U/L)	50.5[33-82.5] *†	21[18-26] *	21[18-26] †	**<0.001**
ALT(U/L)	60[37.5-99]*†	17[13.5-21]*†	17[13-23.5]*†	**<0.001**
GGT (U/L)	65[35-106.7]*†	20.5[14-29]*†	21[14-35.7]*†	**<0.001**
PCRus (mg/L)	0.5[0.3-1.07] †	0.7[0.3-1.37]	0.7[0.4-1.9] †	**0.010**
Uric Acid (mg/L)	5.4±1.3	5.4±1.5	5.6±1.7	0.446
Homocistein (µm/L)	14.4±4.2*	16.7±6.1*‡	15.3±4.8‡	**<0.001**
Pro-BNP (pg/ml)	69[37.8-137.3]	64[27.9-132.9]	54.5[27.2-124.7]	0.202
Glucose (mg/dL)	96[88.5-110]	94[88-111]	94[86-106.5]	0.227
Insulin (µu/ml)	13.8[8.2-18.5]	11.6[8.5-18.1]	11.3[7.8-15.9]	0.123
HOMA index	3.9†±2.6	3.7±2.8	3.3±2.3†	**0.022**
HbA1c (%)	5.7±1.2	5.7±0.9	5.6±0.7	0.342

PERFIL ATEROGÉNICO

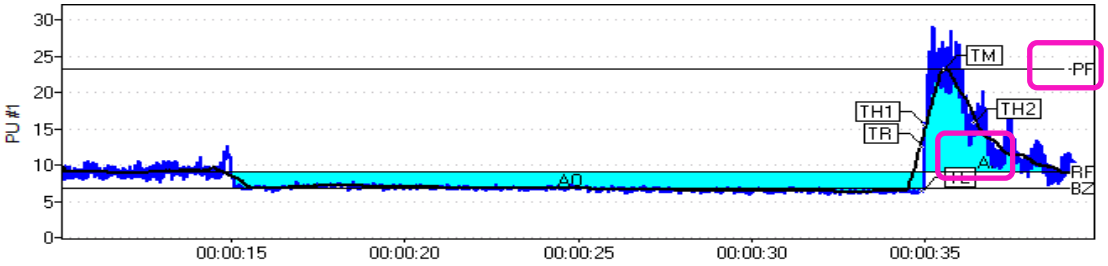
	Basal	12 weeks (SVR)	1 Year FU	p
CT (mg/dL)	165.9±37.6*†	185±40.6*	182.3±36.4†	**<0.001**
cHDL (mg/dL)	56.9±26.4	52.5±17.5	52.3±17.4	0.082
cLDL (mg/dL)	96.6±34.7*†	117.8±38.3*	110.9±33.1†	**<0.001**
TG (mg/dL)	99.2±51.5	95.2±44.4‡	106.6±55.8‡	0.038
ApoA(mg/dL)	148.4±30.4	148.2±30.1	148.4±32.1	0.997
ApoB (mg/dL)	89.9±27.5*†	99.8±31.3*	101.7±29.5†	**<0.001**
Lp(a) (mg/dL)	3[1-13] *†	4[2-15.5] *	5[2-16] †	**<0.001**

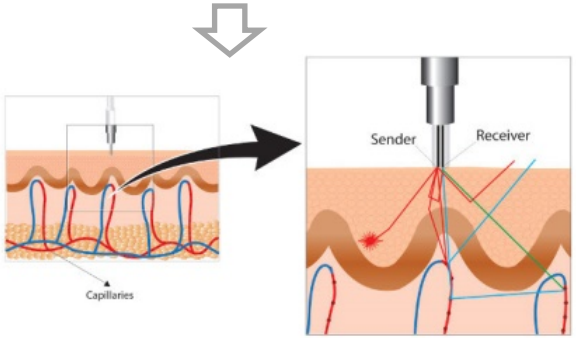
- **PATOLÓGICO <0,9**
- **NORMAL: 0,9-1,39**

Hypertension. 2017;71:e13–e115

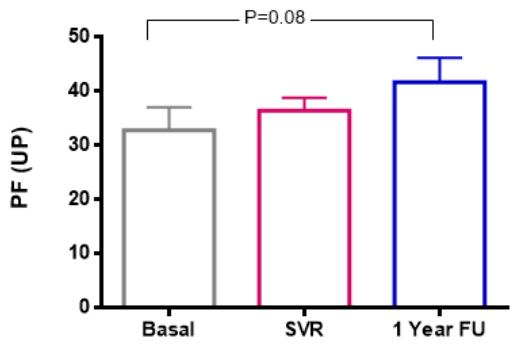
	BASAL	12 SEM (SVR)	1 AÑO	P
ITB PAT. <0,9 (n=35; 39%)	0,8 ±0,01	1,05±0,21	1,06±0,2	**<0,001**
ITB NORMAL (n=32; 36%)	1,12±0,13	1,04±0,18	1,04±0,1	0,072

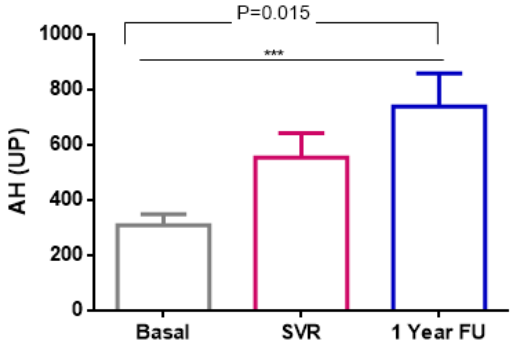
S. C) Disfunción endotelial (Flujimetría láser doppler)

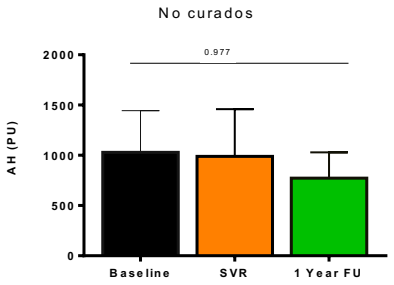




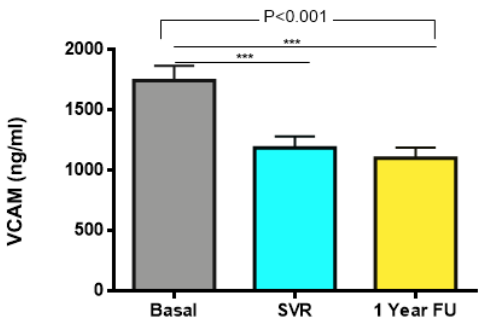
Stiefel P; Coron Artery Dis. 2012 Jan;23(1):57-61 → AH<860 UP
(54%Patológicos)

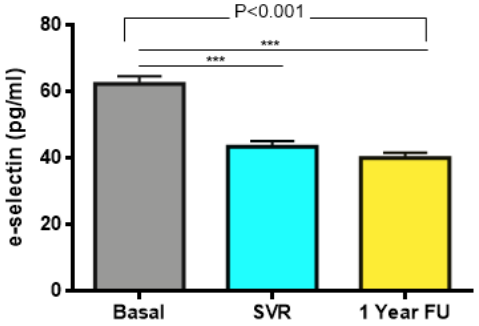


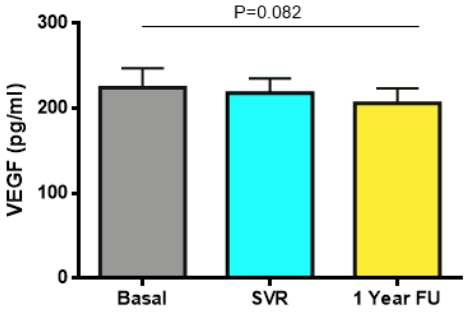


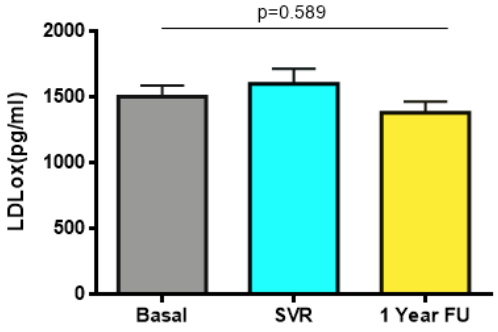


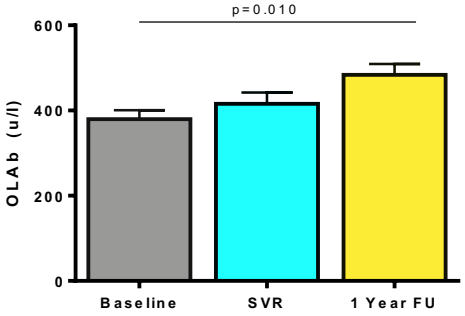
C) Disfunción endotelial (Marcadores solubles)



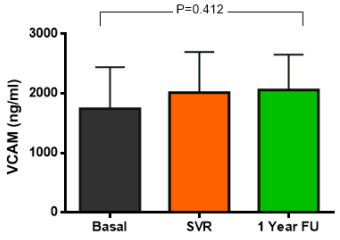


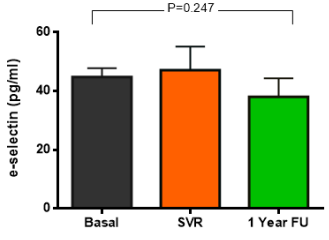


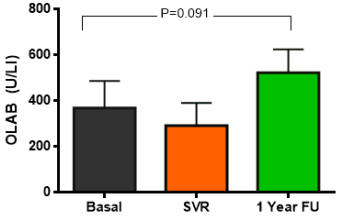


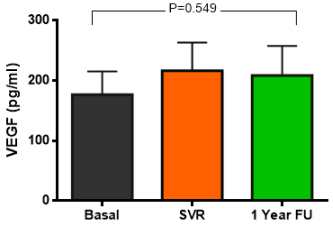


Pacientes no curados







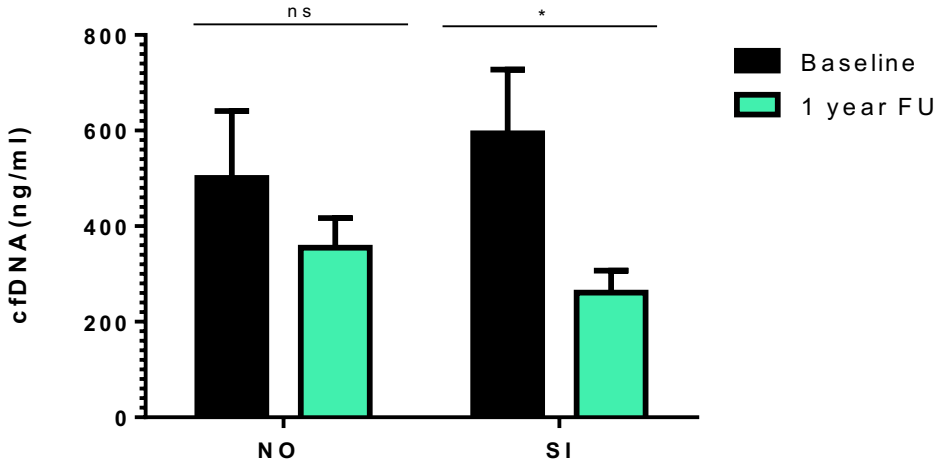


D) Daño celular (ADN circulante)

- **Los niveles de ADNc se asocian con inflamación sistémica.**
  (Jylhava J,et al. Exp Gerontol 2012;47:372e8).

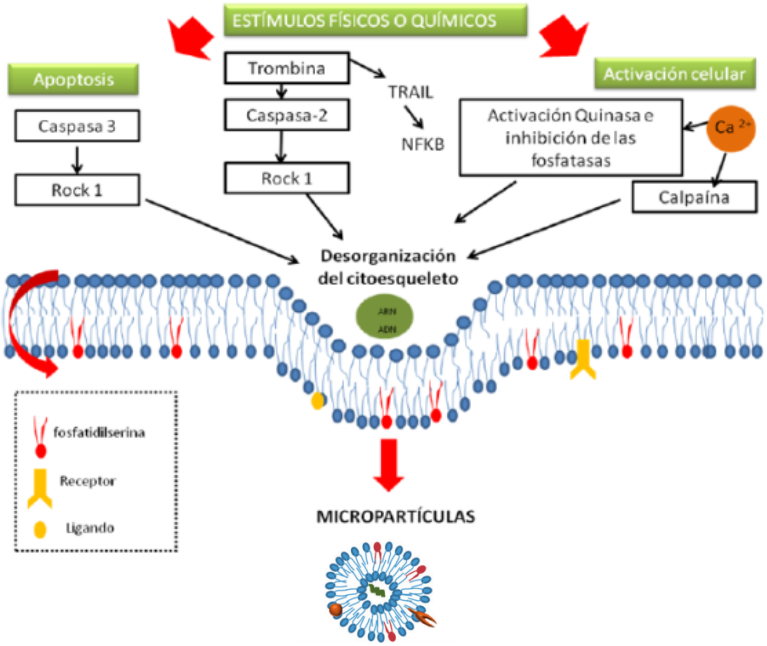
- **Marcador de enfermedades cardiovascular y predictor de mortalidad en el infarto de miocardio.**
  (Butt AN, et al. Ann N Y Acad Sci 2013;1137:236e42).

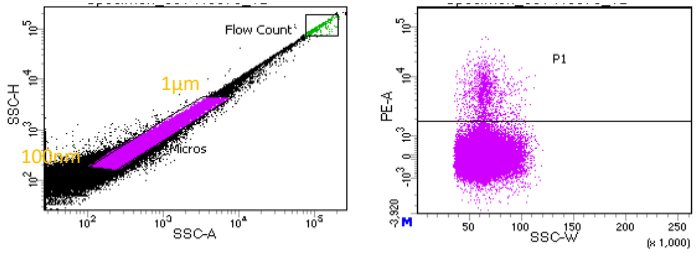
Disfunción Endotelial



Existe una disminución de ADNc en aquellos pacientes que parten de disfunción endotelial

D) Daño celular (Micropartículas apoptóticas)





MPs totales= AV+
EMPs= AV+ CD31+CD41-
PMPs= AV+ CD31+CD41+

Inflamación, coagulación y disfunción endotelial

BIOMARCADOR DE RCV

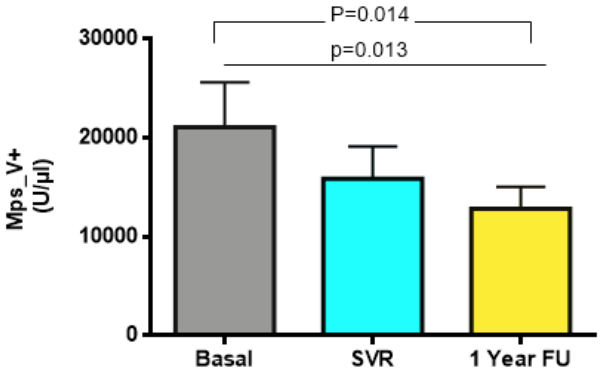
EMPs
PMPs

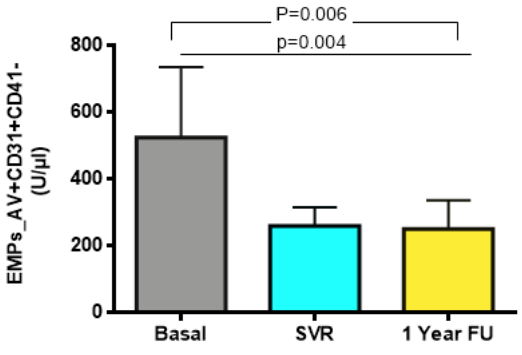
Inducen la expresión de ICAM, IL6, IL8….

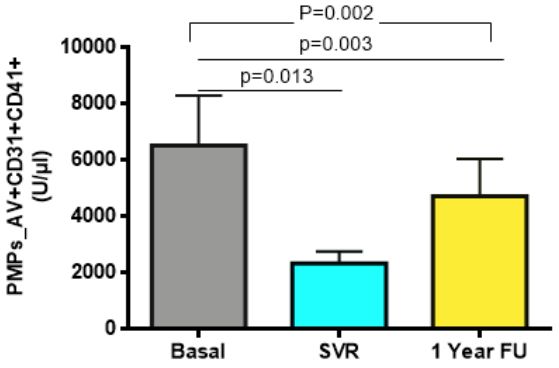
Aumentadas en pacientes con aterosclerosis, HTA….

Rautou, et al., Circ. Res. 108 (2011) 335–343.
Amabile, S. et al., , Eur. Heart J. 35 (2014) 2972–2979.
Loyer X et al., Cir research 114(2014) 345-353

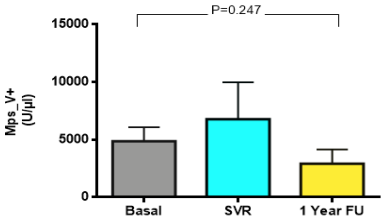
D) Daño celular (Micropartículas apoptóticas)

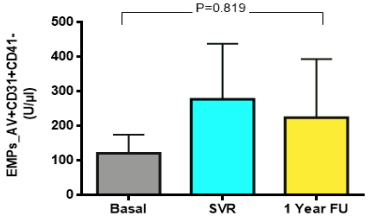


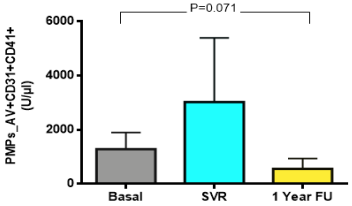


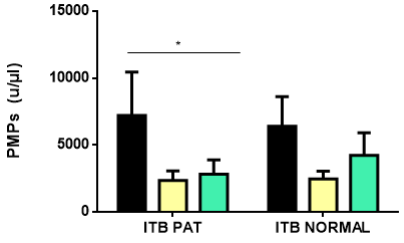


Pacientes no curados

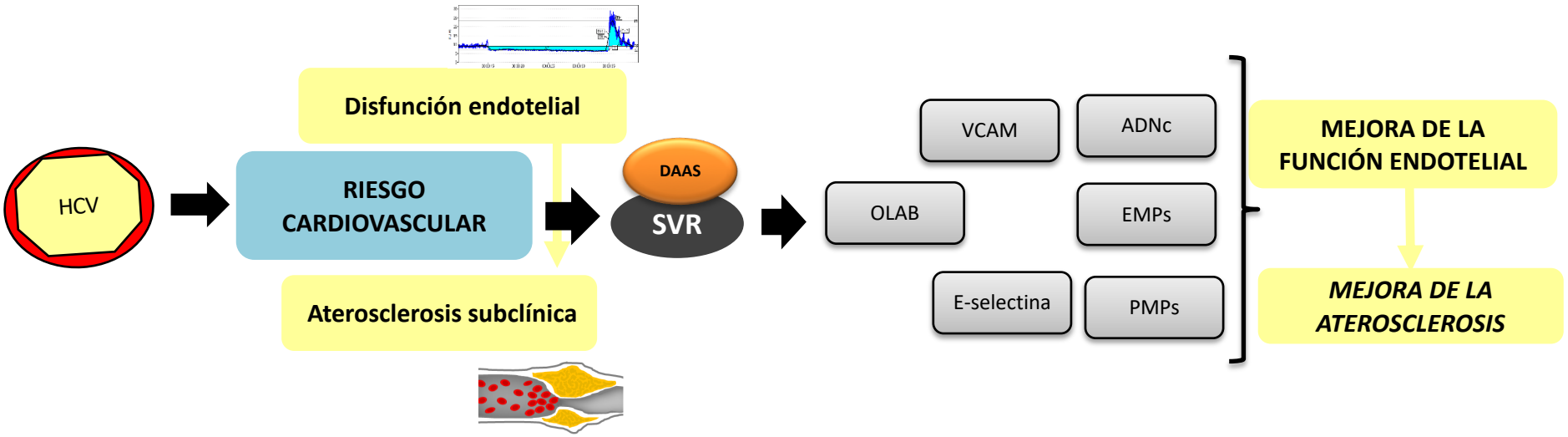








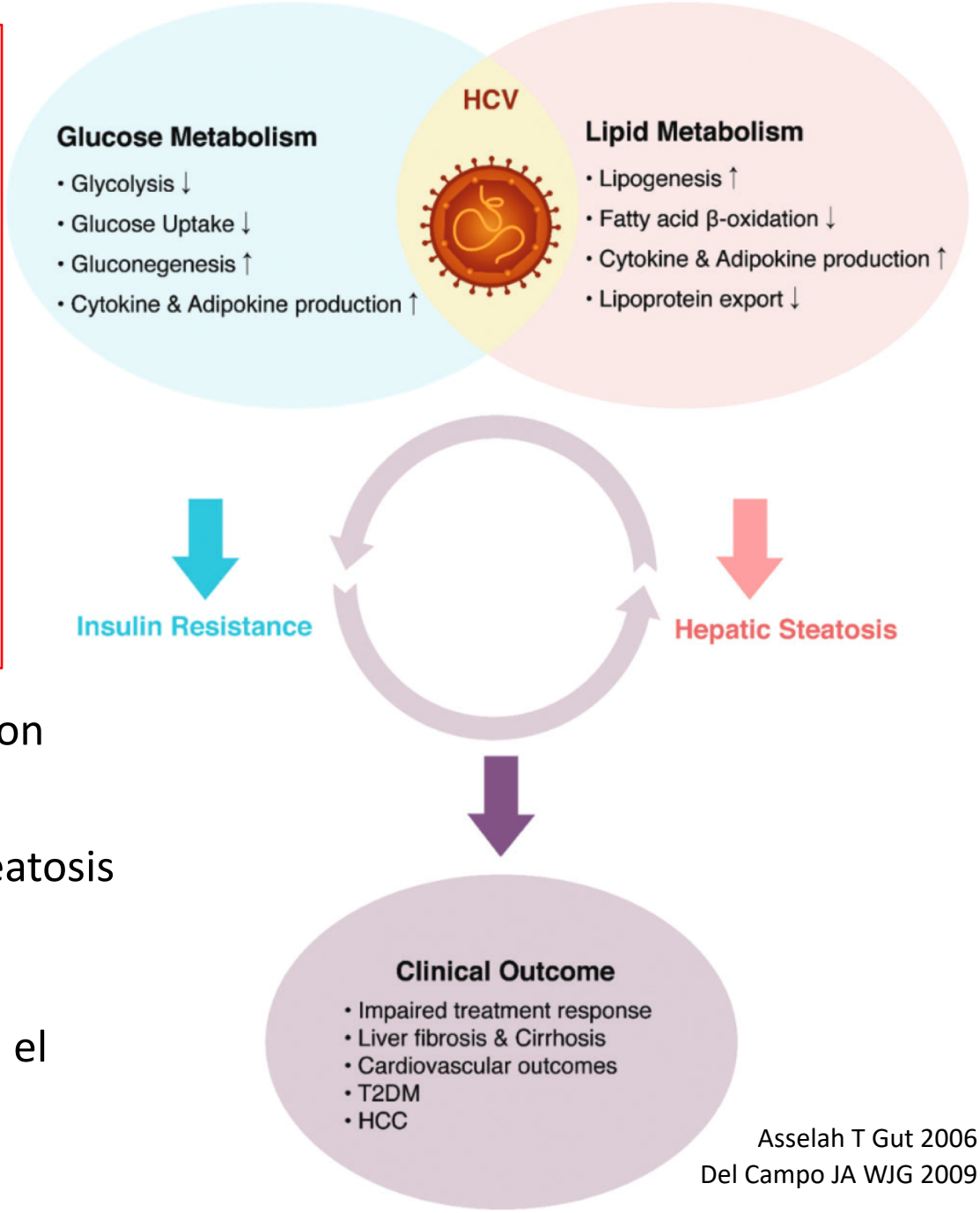
Mejoría mas evidente en aquellos con ITB patológico



La erradicación del virus de la Hepatitis C mejora el riesgo cardiovascular a través de una mejoría de la función endotelial y de la aterosclerosclerosis.

Tipos de esteatosis asociadas al Virus de la Hepatitis C

- **Metabólica:** asociada a Sd. Metabólico y resistencia a insulina (no genotipo 3).
- **Viral:** relacionado con carga viral e hipolipedemia en pacientes infectados por genotipo 3.

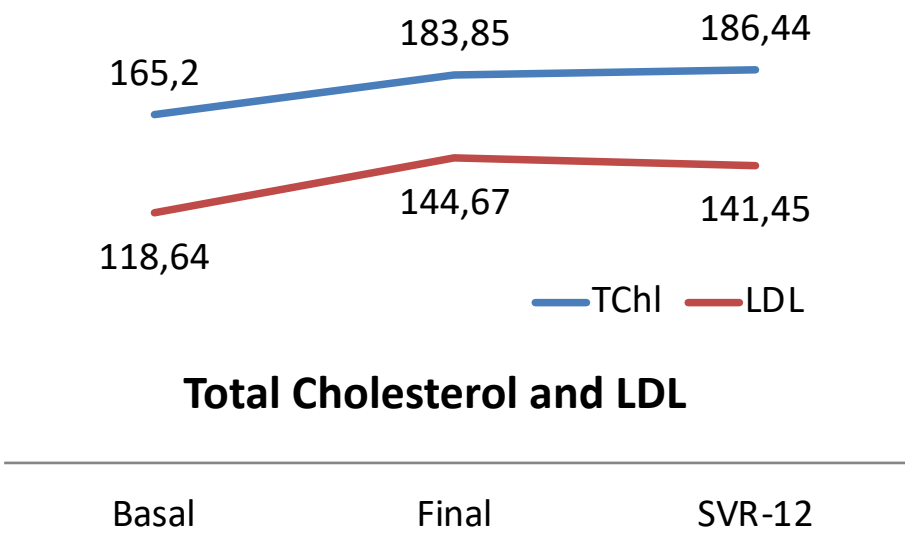


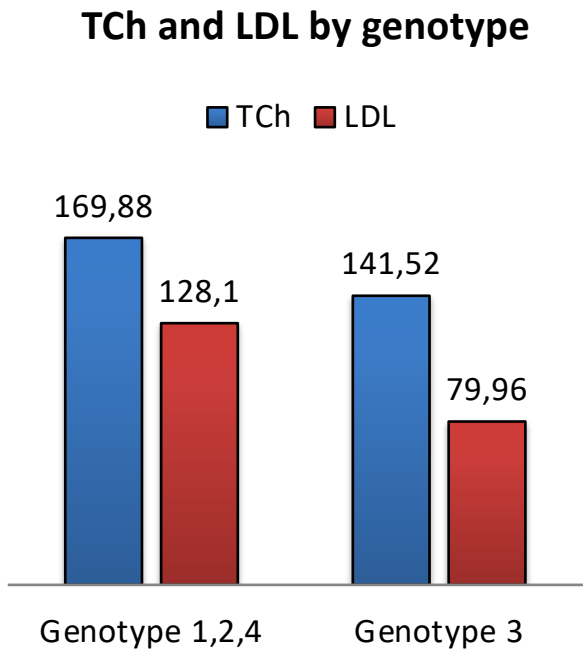
- Peor respuesta a tratamientos con interferon
- Relación hiperinsulinemia y esteatosis
- Riesgo cardiovascular
- El tratamiento antiviral modifica el perfil lipídico del paciente.

Asselah T Gut 2006
Del Campo JA WJG 2009

Variation of the lipid profile of patients with hepatitis C after treatment with direct action antivirals. Statins modifying effect

Pedro Linares[1], Francisco Jorquera[1,3], Begoña Álvarez-Cuenllas[1], Raisa Quiñones[1], Esperanza Gutierrez[2], Luzdivina Monteserín[1], Luis Vaquero[1], Maria Guerra2, Eva Fernandez-Moran4, David Fierro[5].





AASLD 2017

Diagnóstico de Esteatosis

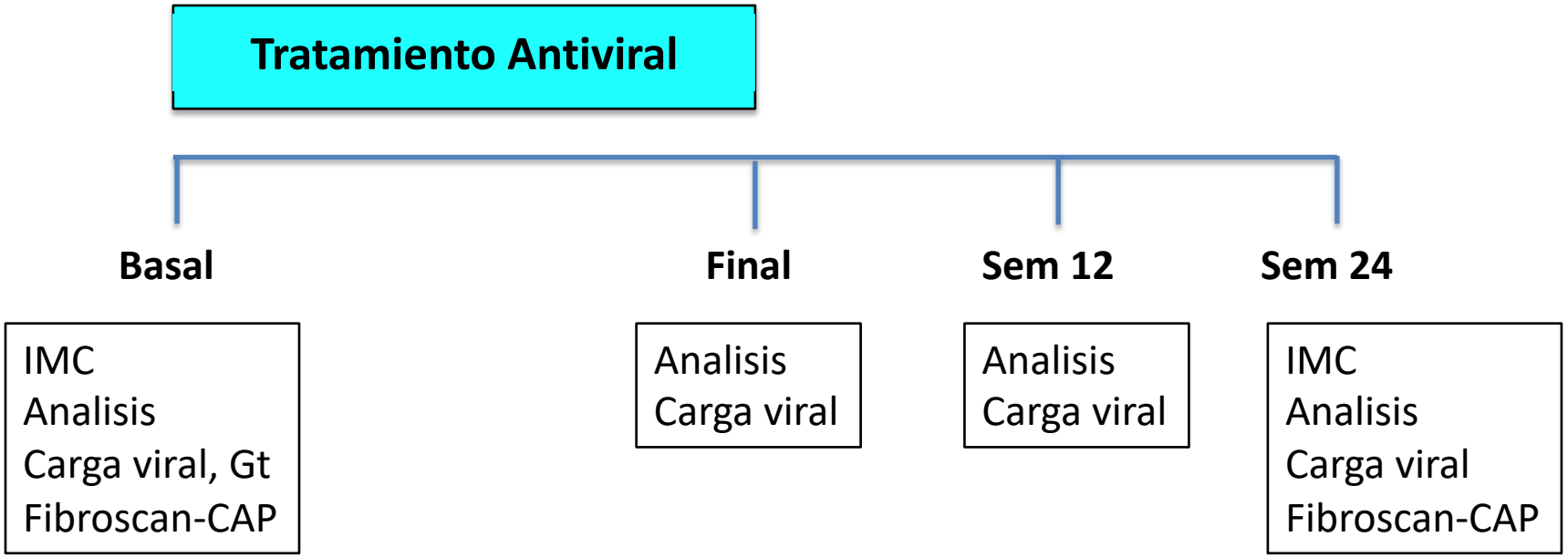
Biopsia Hepática

- Invasiva
- Errores de muestra
- Variabilidad inter-intraobservador
- Cara
- No exenta de riesgos y complicaciones

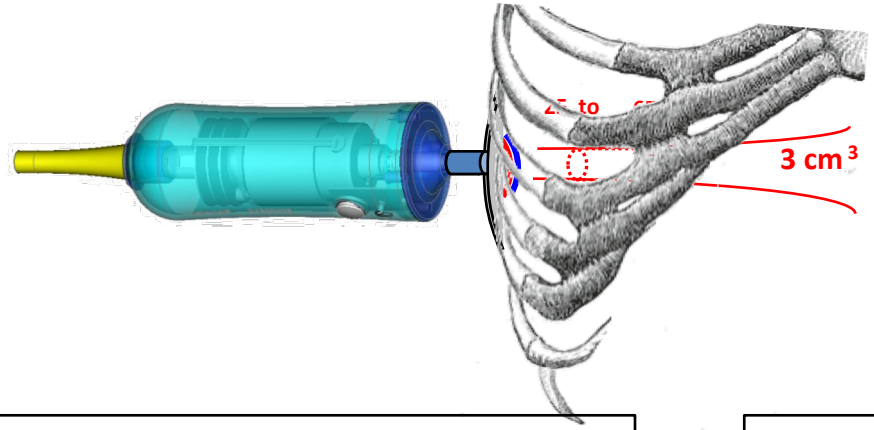
CAP ("Controlled Attenuation Parameter")

- Método no invasivo que permite cuantificar la esteatosis a la vez que la rigidez hepática.
- Ventajas:
  - Inmediato, fácil, reproducible, barato, …
  - Alternativa a otras técnicas invasivas o no disponibles
- Inconvenientes:
  - No aplicable a algunos pacientes
  - Valores de corte no claramente identificados
  - Puede depender de la etiología de la enfermedad

Material y Métodos



- Modelo fibroScan® 502 Touch (sondas M, XL, Echosens, Paris, Francia)
- Adquisición en condiciones habituales, 2 horas de ayuno
- 12 medidas válidas



RHM expresada en KPa

IQR < 3%

IQR/med < 30

Tasa éxito > 60%

CAP expresado en dB/m

S1: < 248 dB/m

S2: 249-280 dB/m

S3: > 280 dB/m

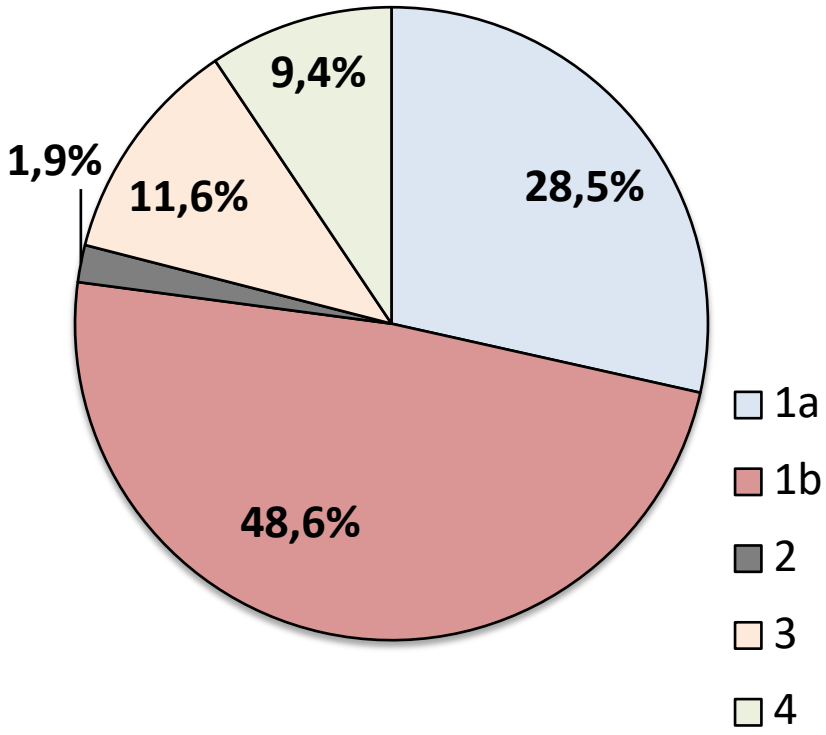
Sasso M, et al. J Viral Hepat. 2012

Resultados

Número muestra	364
Sexo	60% hombres
Edad media (años)	57,67 ± 13,3

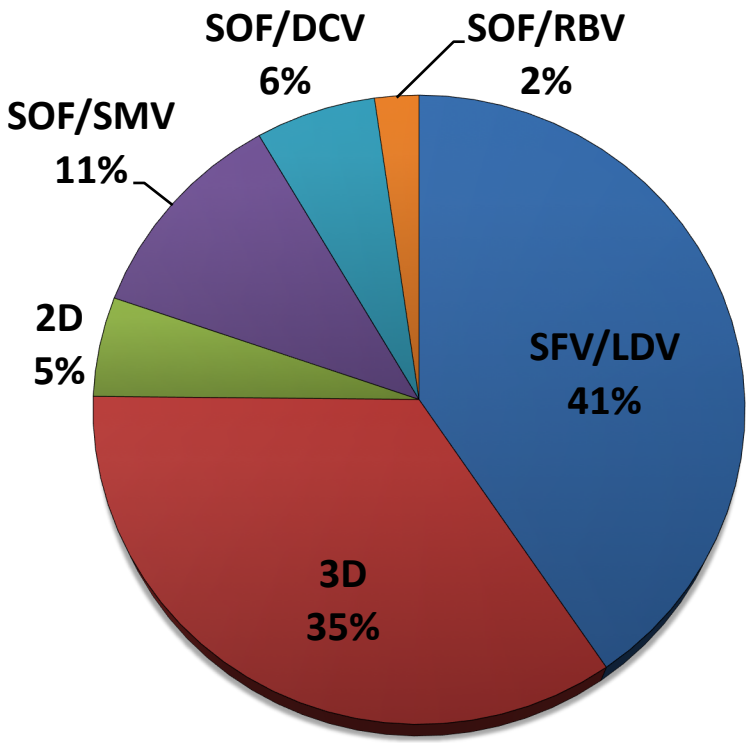
HTA	26%
DM	12,4%
Dislipemia	12,8%
Cirrosis	28,2%
Naive	53%

Distribución por genotipos

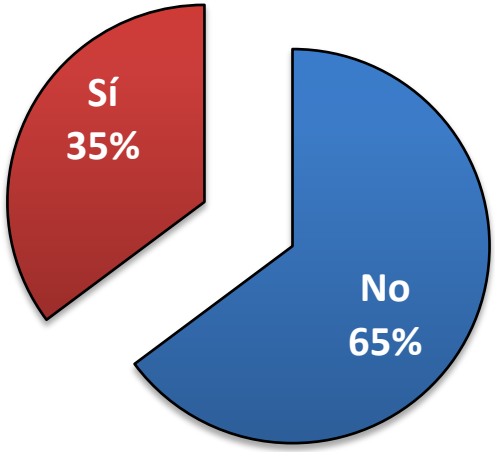


Tratamientos empleados

Tipo de AAD

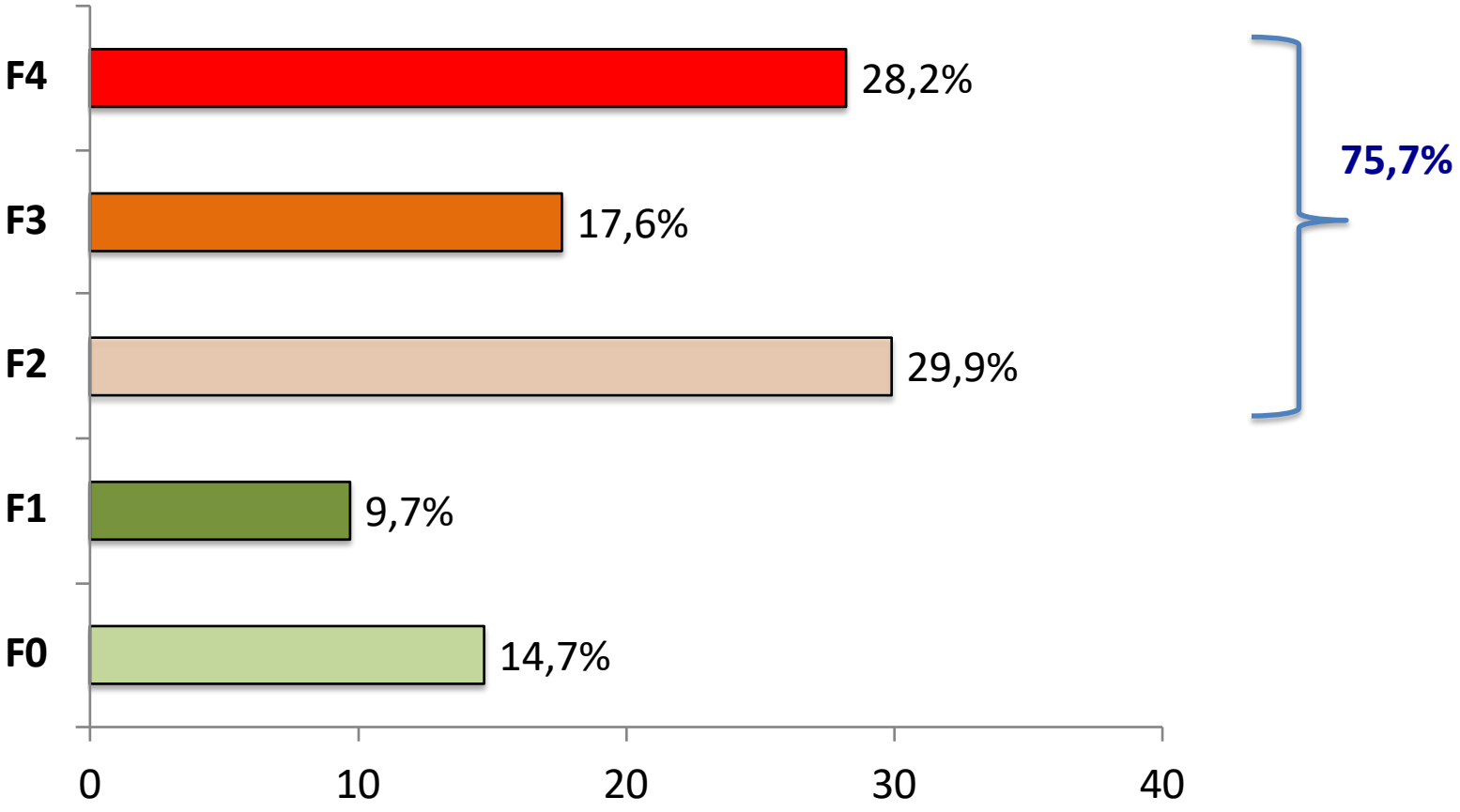


Uso de Ribavirina



Duración del tratamiento	Porcentaje
8 semanas	7,2%
12 semanas	84,7%
24 semanas	7,1%

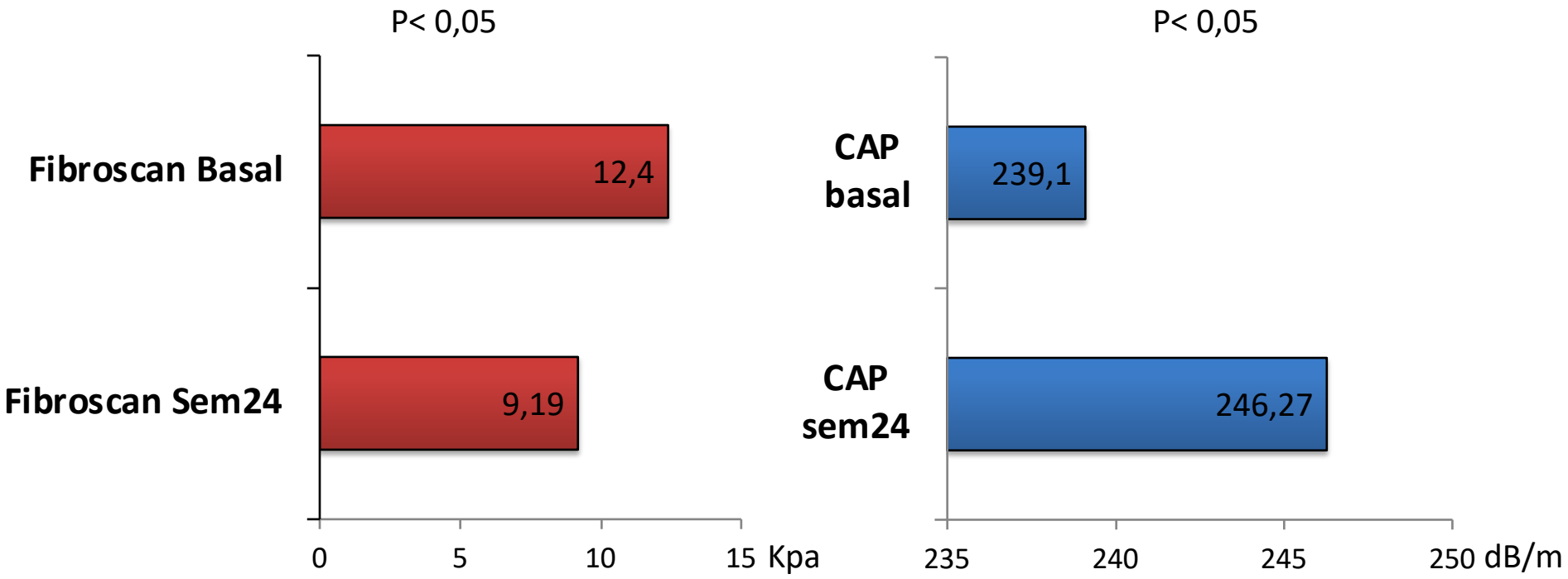
Distribución por Fibrosis Basal



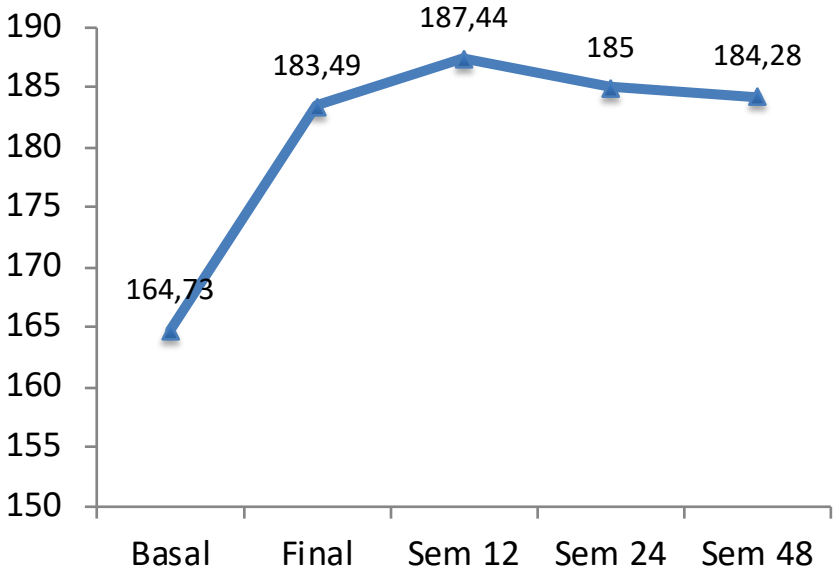
Resultados

	Basal	Semana 24 Post-Tratamiento	Valor p
Peso (Kg)	73,06 ± 14,4	72,89 ± 14,2	n.s.
IMC medio	26,9 ± 4,3	26,22 ± 4,1	n.s.
Insulina	19,94 ± 27,8	14,71 ± 13,16	$p < 0.05$
HOMA	5,4 ± 7,2	3,67 ± 4,1	$p < 0.05$
Colesterol (mg/dL)	165,91	186,15 ± 37,5	$p < 0.05$
Triglicéridos (mg/dL)	101,97 ± 48	113,97 ± 71,9	$p < 0.05$
HDL	47,57± 15,98	53,85 ± 19,81	n.s.
LDL	122,56 ± 12,348	139,16 ± 51,7	$P < 0.05$
RHM (KPa)	12,41± 9,2	9,19 ± 6,6	$P < 0.05$
CAP (dB/m)	239,16± 50,08	246,27 ± 55,98	$P < 0.05$

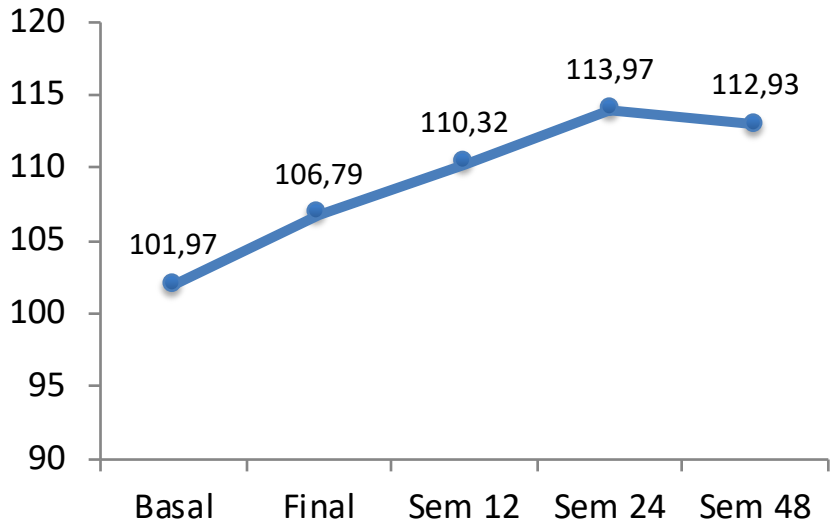
FibroScan-CAP basal y sem 24



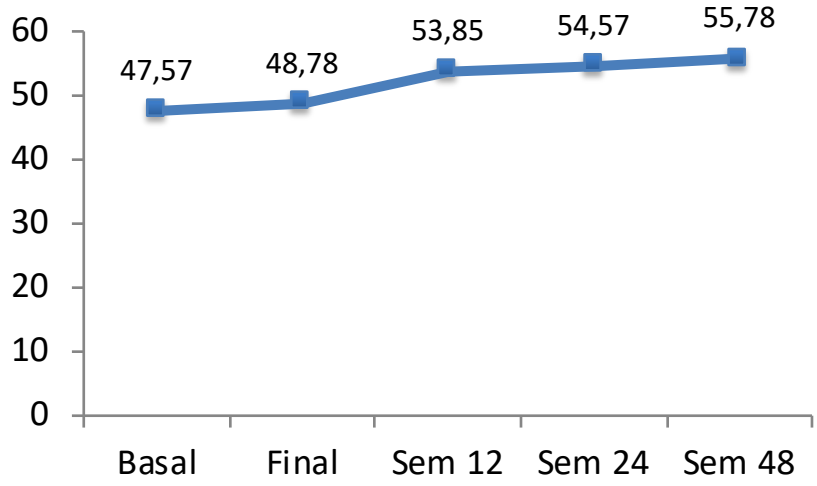
Colesterol



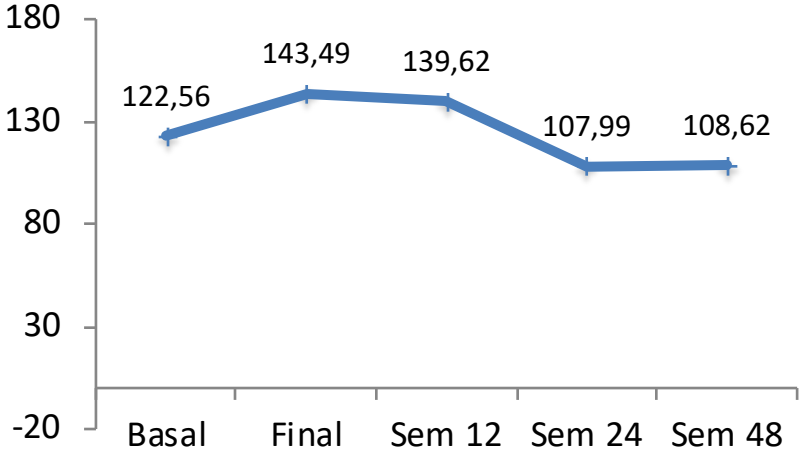
TGL



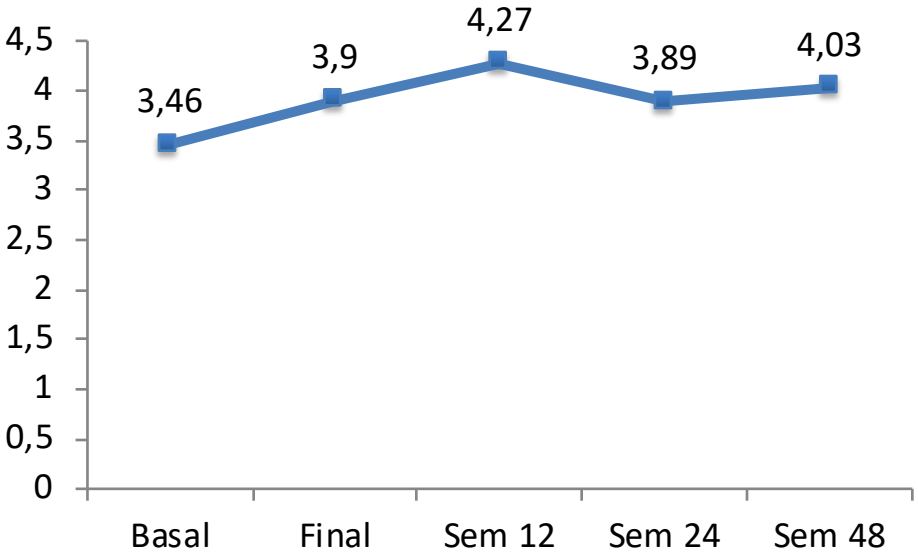
HDL



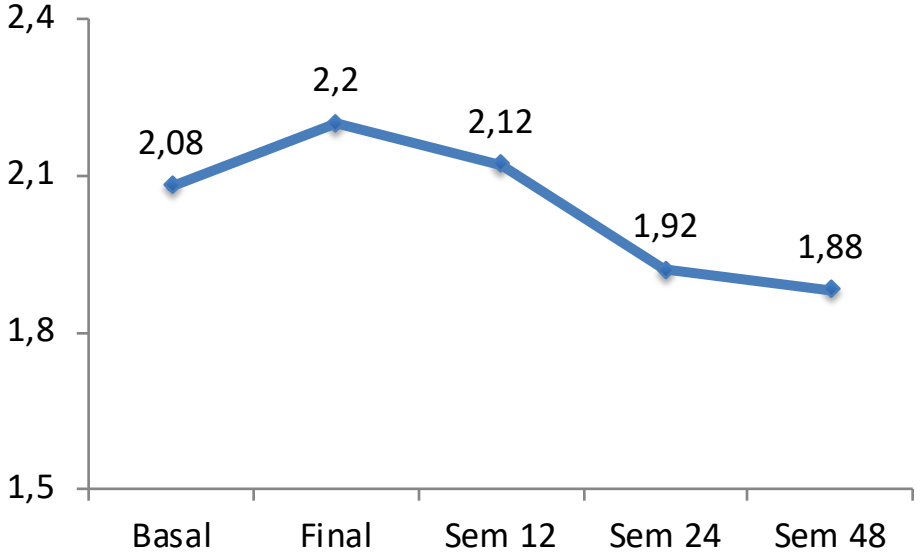
LDL

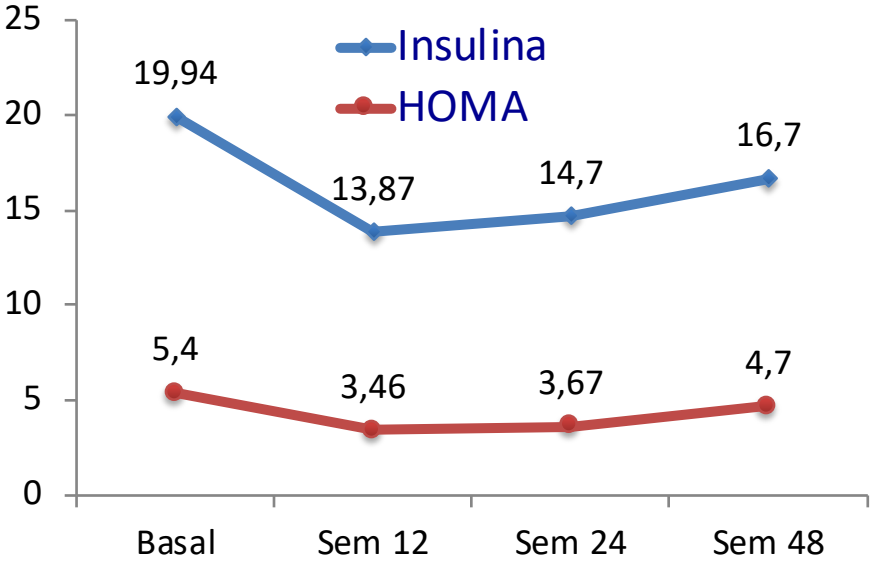


Indice Aterogénico (Col/HDL)



Riesgo Coronario (LDL/HDL)

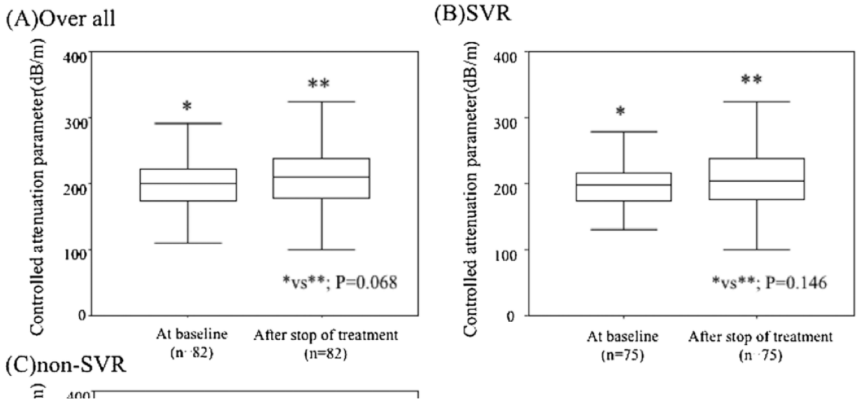




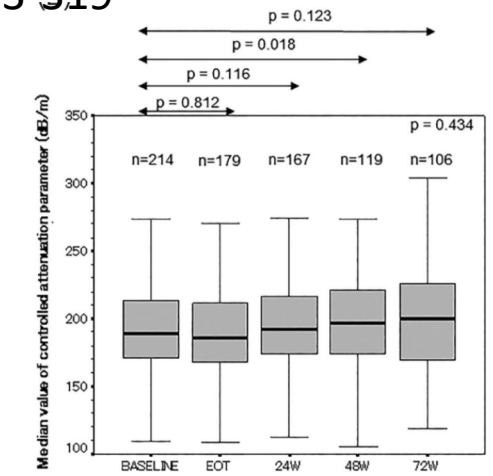
Otros resultados similares

- ✓ Póster 125 (AEEH 2018): Aumento de los valores del CAP del fibroScan compatibles con esteatosis en pacientes con hepatitis crónica por el VHC a pesar de alcanzar la respuesta viral sostenida. T Broquetas et al. Hospital del Mar

- ✓ Predictors of treatment efficacy and liver stiffness changes following therapy with Sofosbuvir plus Ribavirin in patients infected with HCV genotype 2. Ohya K et al. J Med Virol 2018;1-7



- ✓ Serial changes in liver stiffness and controlled attenuation parameter following direct-acting antiviral therapy against hepatitis C virus genotype 1b. Ogasawara N et al. J Med Virol 2018; 90:313-319



tenuation parameter (CAP) following oral dual therapy with daclatasvi

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