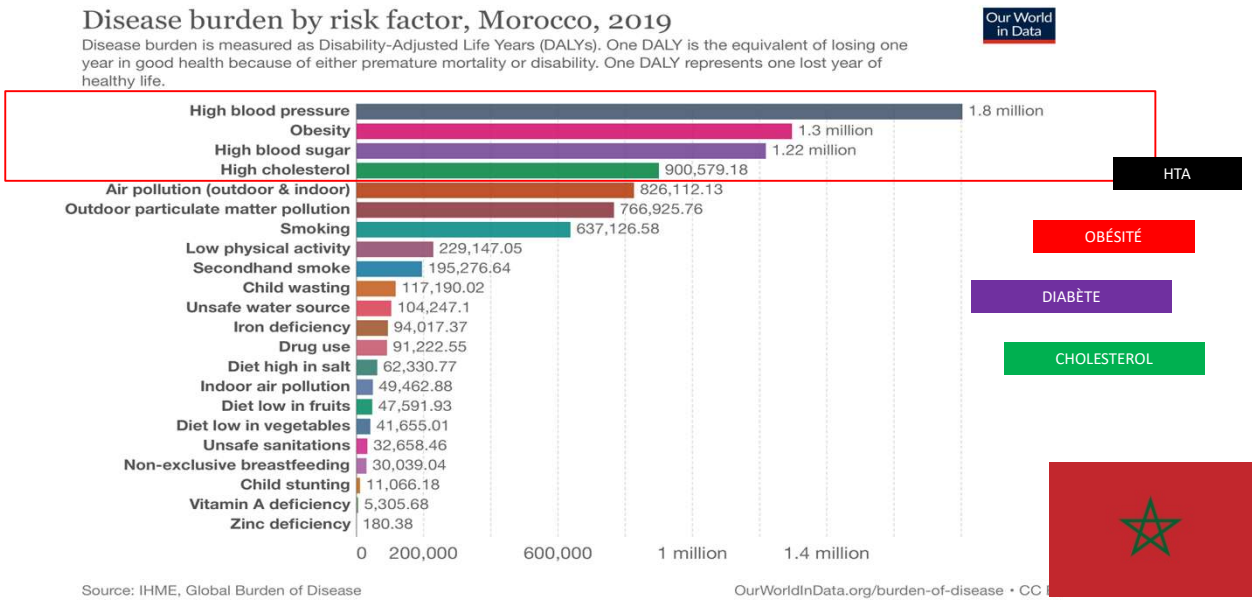
AMBM
Association Marocaine de Biologie Médicale

BILAN LIPIDIQUE QUOI DE NEUF EN 2024

Mai 2024

PRÉSENTÉ PAR :
PR M.SABRY

Morbi-mortalité et FDR CVX



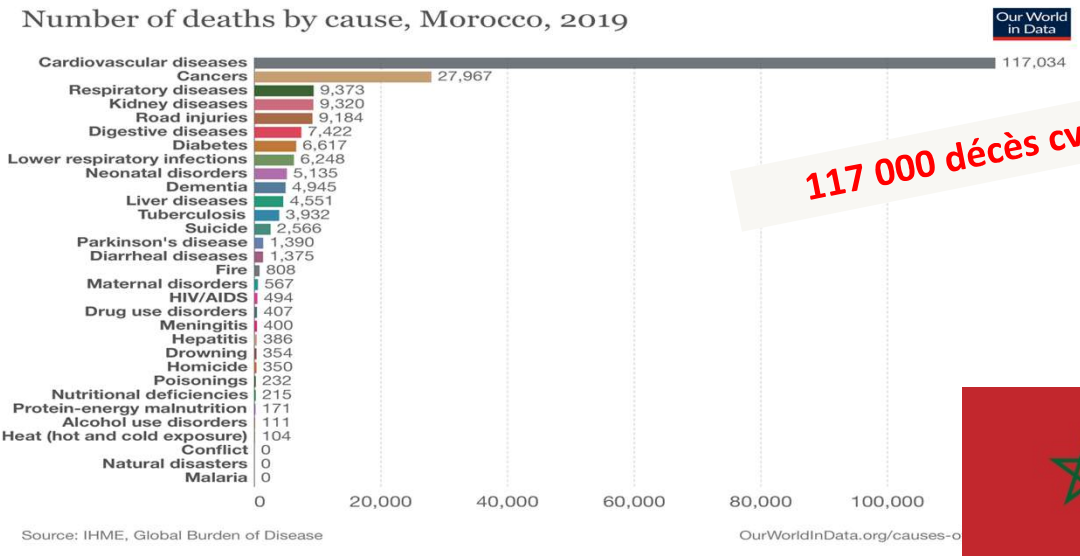
HTA

OBÉSITÉ

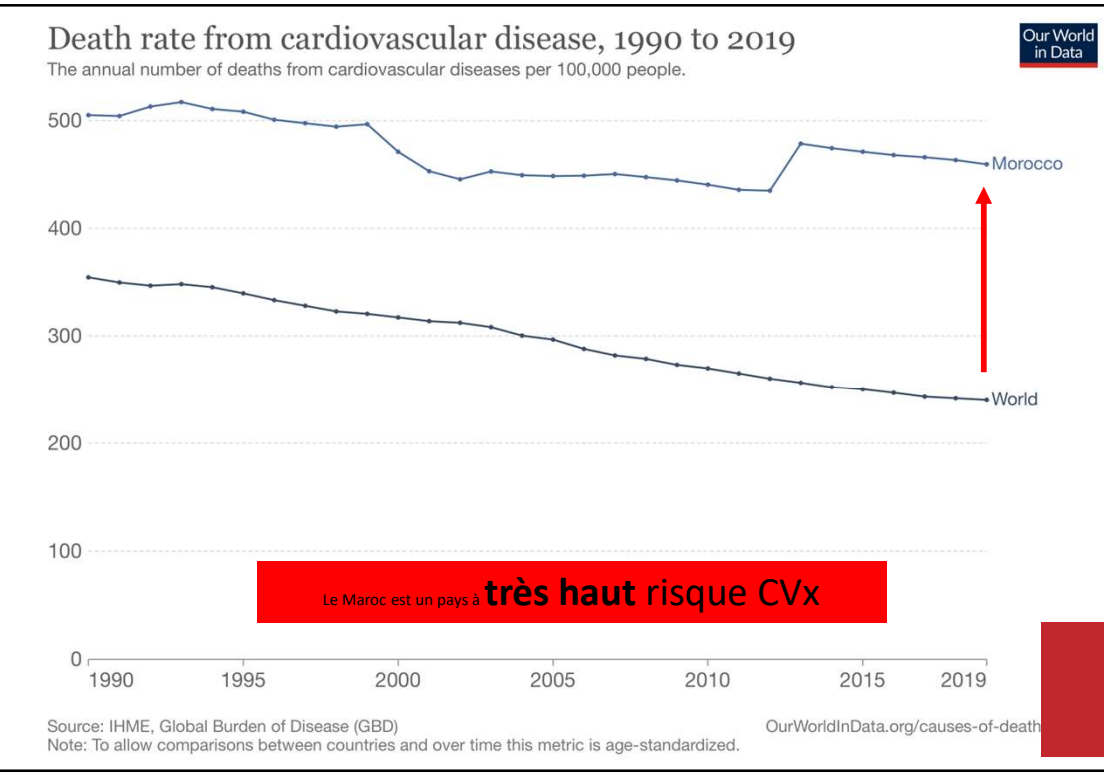
DIABÈTE

CHOLESTEROL

Mortalité cardiovasculaire



117 000 décès cvx



Le Maroc est un pays à **très haut** risque CVx

1986

Cholestérol – maladie coronaire

The Lancet · Saturday 25 October 1986

Etude MRIFT
361 662 hommes
!!!

SERUM CHOLESTEROL, BLOOD PRESSURE, AND MORTALITY: IMPLICATIONS FROM A COHORT OF 361 662 MEN

MICHAEL J. MARTIN[1] STEPHEN B. HULLEY[1] WARREN S. BROWNER[1,2] LEWIS H. KULLER[3] DEBORAH WENTWORTH[4]

Clinical Epidemiology Program, Institute for Health Policy Studies and the Department of Epidemiology and International Health,[1] and Division of General Internal Medicine, Veterans Administration Medical Center,[2] University of California, San Francisco; Department of Epidemiology, University of Pittsburgh,[3] and Coordinating Center for Biometric Research, University of Minnesota,[4] USA

Summary The risks associated with various levels of serum cholesterol were determined by analysis of 6-year mortality in 361 662 men aged 35–57. Above the 20th percentile for serum cholesterol (>181 mg/dl, >4·68 mmol/l), coronary heart disease (CHD) mortality increased progressively; the relative risk was large (3·8) in the men with cholesterol levels above the 85th percentile (>253 mg/dl, >6·54 mmol/l). When men below the 20th cholesterol percentile were used as the baseline risk group, half of all CHD deaths were associated with raised serum cholesterol concentrations; half of these excess deaths were in men with cholesterol levels above the 85th percentile. For both CHD and total mortality, serum cholesterol was similar to diastolic blood pressure in the shape of the risk curve and in the size of the high-risk group. This new evidence supports the policy of a moderate fat intake for the general population and intensive treatment for those at high risk. There is a striking analogy between serum cholesterol and blood pressure in the epidemiological basis for identifying a large segment of the population (10–15%) for intensive treatment.

and heart disease. Several prospective cohort studies have provided information on this risk relation,[5] but none has had sufficient power to determine its exact pattern.

We analysed the 6-year mortality data for the 361 662 men screened as part of the Multiple Risk Factor Intervention Trial (MRFIT). This group is thirty times larger than the randomised MRFIT study group and seventy times larger than the Framingham cohort. Its large size allows us to examine the precise pattern of risk relation between serum cholesterol and CHD, and to compare it with the pattern observed for blood pressure. The findings have important implications for clinical and public health policy directed at these two risk factors.

Materials and Methods

The methods have been reported in detail elsewhere.[6-8] MRFIT was a multicentre study of the effect of coronary risk factor reduction in middle-aged men at high risk of coronary artery disease. To select the MRFIT participants, 361 662 men aged 35–57 were screened during a 2-year period beginning in 1973. The screening records included birthdate, social security number, and smoking status, blood pressure, and serum cholesterol. Three measurements of systolic and diastolic blood pressure were made with a mercury sphygmomanometer, the participant being seated; the average of the second and third readings was recorded. Serum cholesterol was determined in one of fourteen laboratories under the supervision of the MRFIT Central Laboratory in San Francisco and the Lipid Standardization Laboratory of the Centers for Disease Control in Atlanta.

In 1982, the vital status of each member of this cohort was determined by matching last name and social security number against Social Security Administration mortality files. Death certificates were then obtained from state health departments, and cause of death was coded by a nosologist according to the 9th revision of the International Classification of Diseases (ICD 9).[10] The CHD death category included those with ICD 9 codes 410 to 414. Death certificates were obtained for 94% of the decedents.

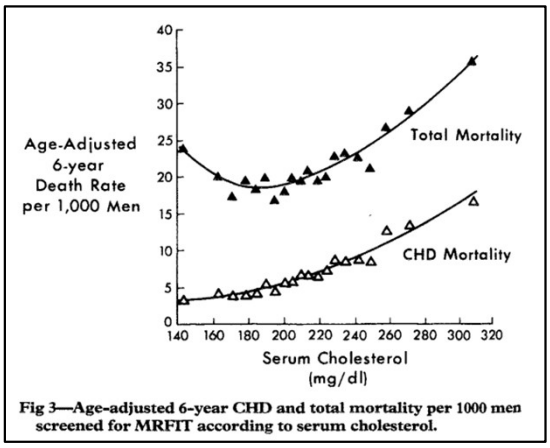
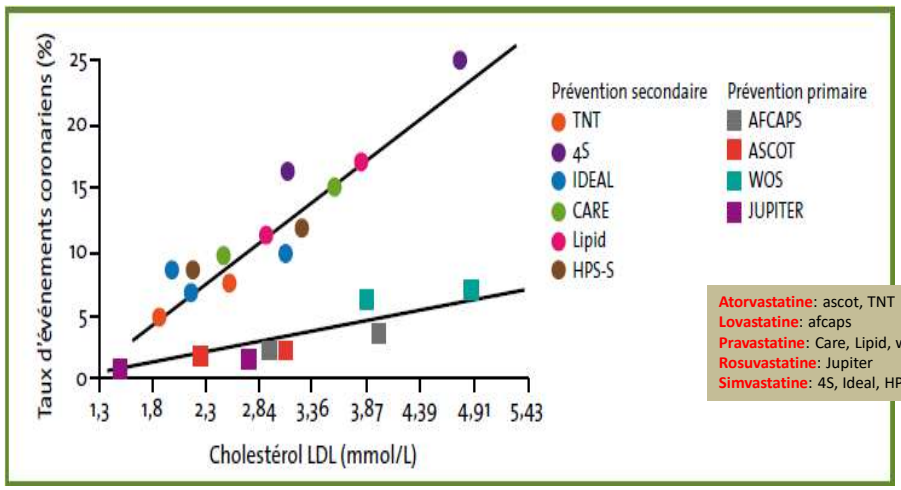


Fig 3—Age-adjusted 6-year CHD and total mortality per 1000 men screened for MRFIT according to serum cholesterol.

Martin MJ. Lancet 1986 ; 2



Atorvastatine: ascot, TNT
Lovastatine: afcaps
Pravastatine: Care, Lipid, woscops
Rosuvastatine: Jupiter
Simvastatine: 4S, Ideal, HPS

Le traitement des dyslipidémies est susceptible de réduire la morbi-mortalité cardiovasculaire

En pratique quotidienne

2

Rechercher une dyslipidémie: quand, comment et pourquoi ?

Quand demander un bilan lipidique?

Table 4 Recommendations for lipid profiling in order to assess total CV risk

Condition	Class[a]	Level[b]
Lipid profiling is indicated in subjects with: Type 2 diabetes mellitus	I	C
Established CVD	I	C
Hypertension	I	C
Smoking	I	C
BMI ≥30 kg/m² or waist circumference >94 cm (90 cm[c]) for men, >80 cm for women	I	C
Family history of premature CVD	I	C
Chronic inflammatory disease	I	C
Chronic kidney disease	I	C
Family history of familial dyslipidaemia	I	C
Lipid profiling may be considered in men >40 and women >50 years of age	IIb	C

[a]Class of recommendation.
[b]Level of evidence.
[c]For Asian males.
BMI = body mass index; CV = cardiovascular; CVD = cardiovascular disease.

Chez presque tous vos patients

Quel bilan lipidique?

CT, LDL, HDL, TG ?

Apo B ?
Lp (a)

Non-HDL Cholesterol ?

Apo B

Non HDL

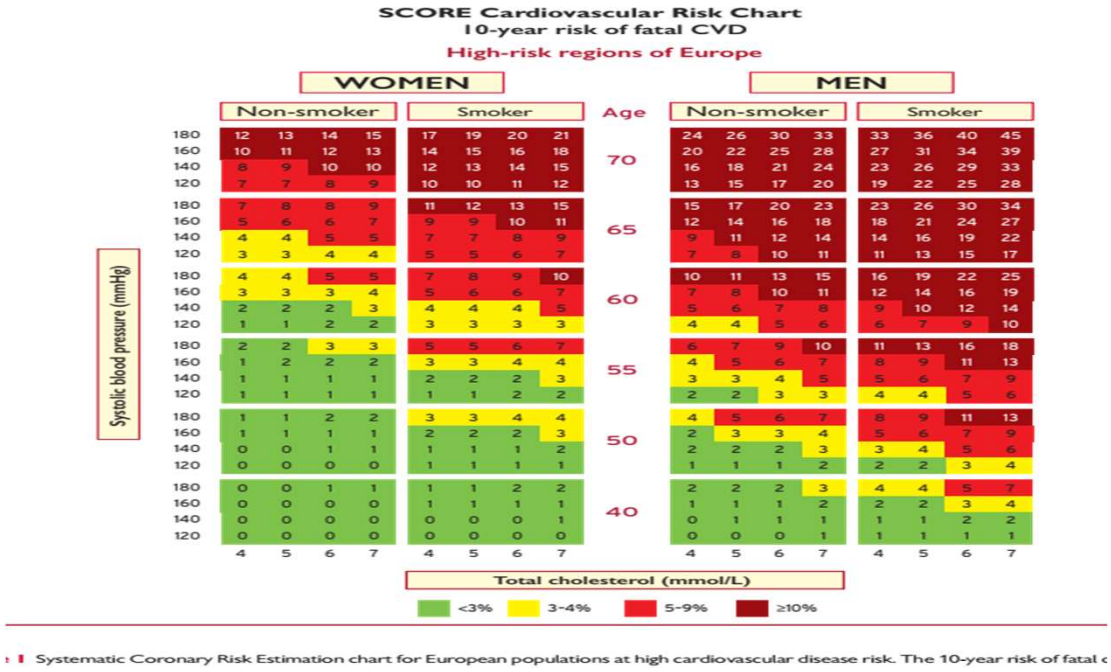
Table 6 Physical and chemical characteristics of human plasma lipoproteins

	Density (g/mL)	Diameter (nm)	TGs (%)	Cholesteryl esters (%)	PLs (%)	Cholesterol (%)	Apolipoproteins	
							Major	Others
Chylomicrons	<0.95	80–100	90–95	2–4	2–6	1	ApoB-48	ApoA-I, A-II, A-IV, A-V
VLDL	0.95–1.006	30–80	50–65	8–14	12–16	4–7	ApoB-100	ApoA-I, C-II, C-III, E, A-V
IDL	1.006–1.019	25–30	25–40	20–35	16–24	7–11	ApoB-100	ApoC-II, C-III, E
LDL	1.019–1.063	20–25	4–6	34–35	22–26	6–15	ApoB-100	
HDL	1.063–1.210	8–13	7	10–20	55	5	ApoA-I	ApoA-II, C-III, E, M
Lp(a)	1.006–1.125	25–30	4–8	35–46	17–24	6–9	Apo(a)	ApoB-100

Apo = apolipoprotein; HDL = high-density lipoprotein; IDL = intermediate-density lipoprotein; LDL = low-density lipoprotein; Lp(a) = lipoprotein(a); PLs = phospholipids; TGs = triglycerides; VLDL = very low-density lipoprotein.

Cholesterol total

- La mesure du taux de CT est nécessaire pour calculer le risque cvx global
- SCORE n'est pas utilisable en cas d'hyper CT familiale, diabète, IR chronique ou HTA sévère



Systematic Coronary Risk Estimation chart for European populations at high cardiovascular disease risk. The 10-year risk of fatal c

LDL cholesterol

- Cible incontestable ++
- Pas l'unique marqueur de risque ++
- Son taux avant de démarrer le traitement pour établir les valeurs cibles en fonction du niveau de risque
- Svt calculé par la formule de Friedwald LDL = CT- HDL- TG/5
- Non valabale si TG > 3.4 g/l
- Formule Sampson ++

$$LDL = \frac{TC}{0.948} - \frac{HDL}{0.971} - \left(\frac{TG}{8.56} + \frac{TG \times nonHDL\ Chol}{2140} - \frac{TG^2}{16,100}\right) - 9.44$$

HDL cholesterol

- Version électronique de score tenant compte de HDL cholesterol disponible en ligne
- Il semble des concentrations élevées sont plus protectrices ++
- Pas de preuve formelle sur le risque de HDL cholesterol

HDL élevé atténue le niveau du risque CVx

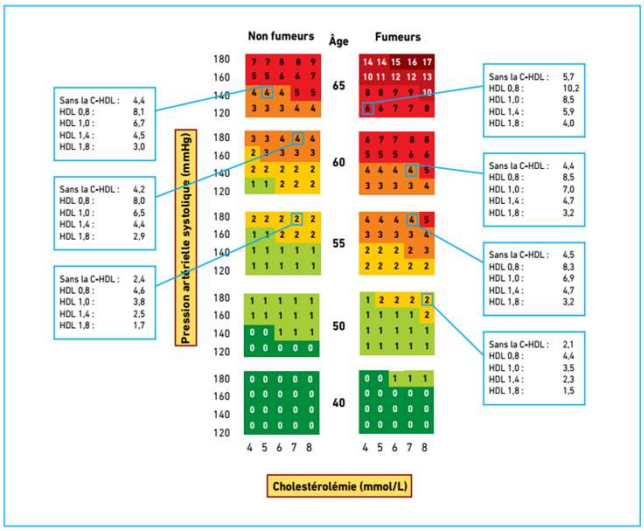


Fig. 5: Fonction de risque avec la cholestérolémie des HDL chez les femmes au sein des populations à haut risque de maladie cardiovasculaire.

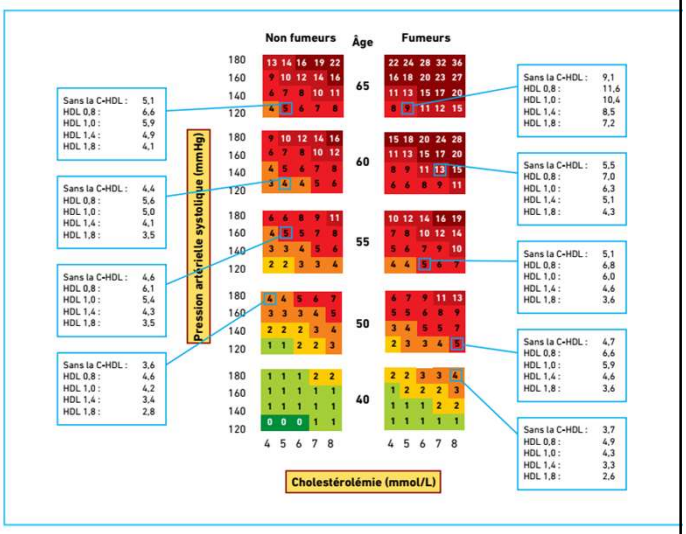
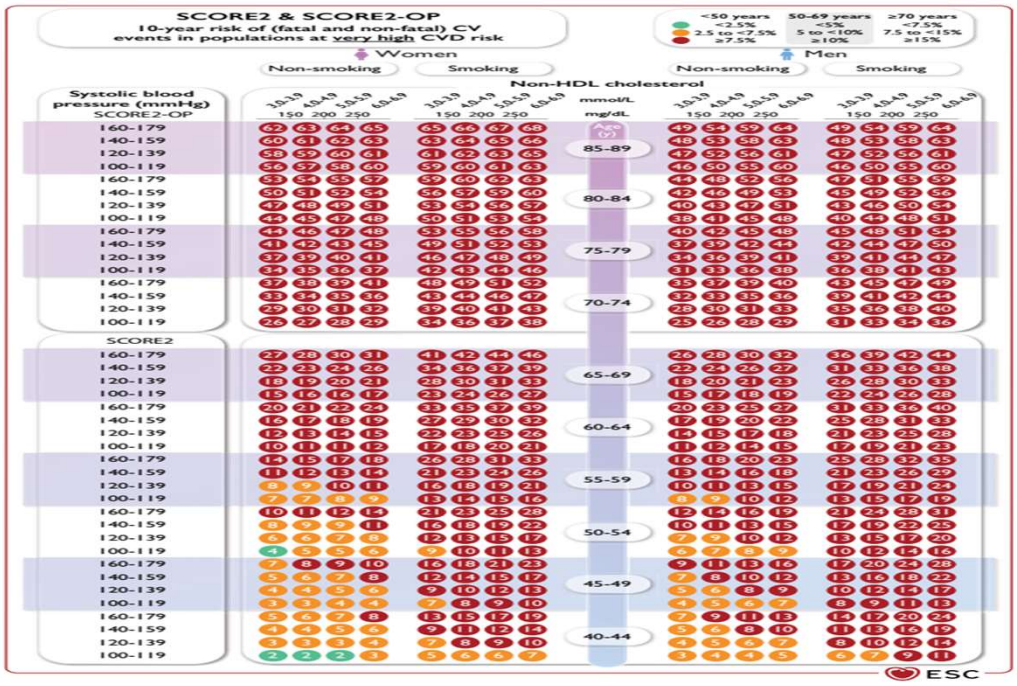


Fig. 6: Fonction de risque avec la cholestérolémie des HDL chez les hommes au sein des populations à haut risque de maladie cardiovasculaire.

Non HDL cholesterol

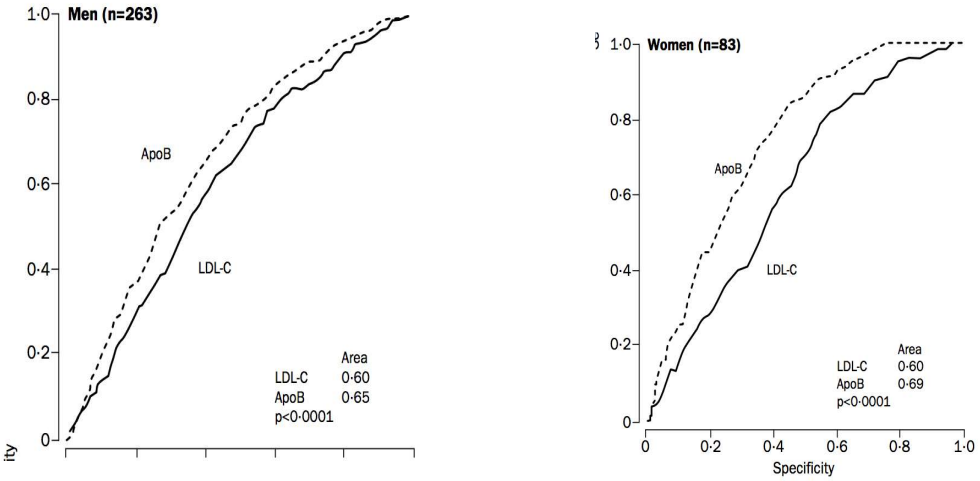
- Malgré la réduction de LDL cholesterol dans le cadre du ttt optimal par statines des évenements cvx persistent
- Risque résiduel ++
- Risque évalué par mesure de Non HDL cholesterol et Apolipoproteine B
- Non HDL cholesterol= CT- HDL cholesterol
- Relation forte entre Non HDL cholesterol et Risque cvx en cas d'hyper TG légère à modérée
- Utilisé dans Score 2 et score OP



Apolipoproteine B

- Rôle essentiel des lipoproteines contenant l'Apo B dans la progression de l'athérosclerose
- La quantification de l'Apo B est le reflet du nombre de particules athérogènes dans le plasma en particulier chez les hyper TG

High apolipoprotein B, low apolipoprotein A-I, and improvement in the prediction of fatal myocardial infarction (AMORIS study): a prospective study



Lipoprotéine (a)

- Lp (a)= LDL + apo (a)
- Apo (a) : polymorphisme génétiquement défini resposable d'une variation interindividuelle
- Lp (a) < 0.5 g/l
- Le taux de Lp (a) est associé la maladie coronaire et les AVC
- Anti PCSK9 réduisent le taux de 20 à 30%
- Reste a demontrer si la réduction du taux s'accompagne d'une diminution des évenements cvx

Quel bilan lipidique?

Recommendations for lipid analyses for cardiovascular disease risk estimation

Recommendations	Class[a]	Level[b]
TC is to be used for the estimation of total CV risk by means of the SCORE system.	I	C
HDL-C analysis is recommended to further refine risk estimation using the online SCORE system.	I	C
LDL-C analysis is recommended as the primary lipid analysis method for screening, diagnosis, and management.	I	C
TG analysis is recommended as part of the routine lipid analysis process.	I	C
Non-HDL-C evaluation is recommended for risk assessment, particularly in people with high TG levels, DM, obesity, or very low LDL-C levels.	I	C
ApoB analysis is recommended for risk assessment, particularly in people with high TG levels, DM, obesity, metabolic syndrome, or very low LDL-C levels. It can be used as an alternative to LDL-C, if available, as the primary measurement for screening, diagnosis, and management, and may be preferred over non-HDL-C in people with high TG levels, DM, obesity, or very low LDL-C levels.	I	C
Lp(a) measurement should be considered at least once in each adult person's lifetime to identify those with very high inherited Lp(a) levels >180 mg/dL (>430 nmol/L) who may have a lifetime risk of ASCVD equivalent to the risk associated with heterozygous familial hypercholesterolaemia.	IIa	C
Lp(a) should be considered in selected patients with a family history of premature CVD, and for reclassification in people who are borderline between moderate and high-risk.	IIa	C

- **Stratification du Risque CVX**
- **Dyslipidémie familiale**
- **Diagnostic**
- **Traitement**

Vérifier les Conditions du bilan lipidique ?

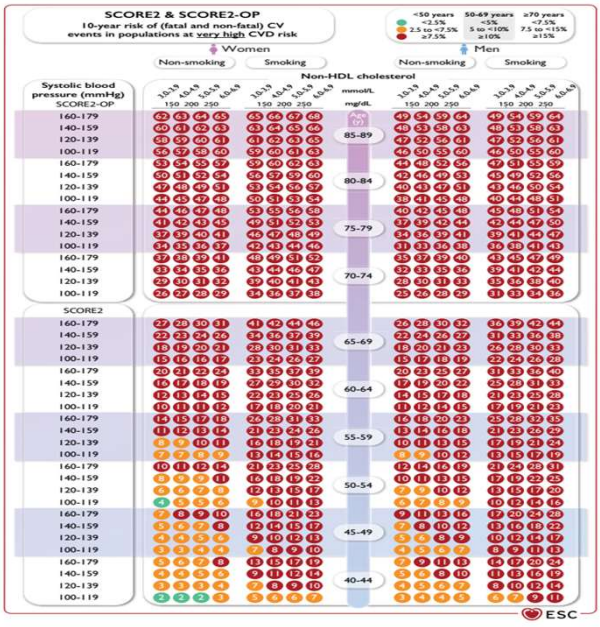
- Prélèvement de sang doit être fait après 8-12 h de jeûne
- Pas de repas copieux la veille
- pas d'alcool de 24 à 48 heures avant le test;

pour triglycérides seulement

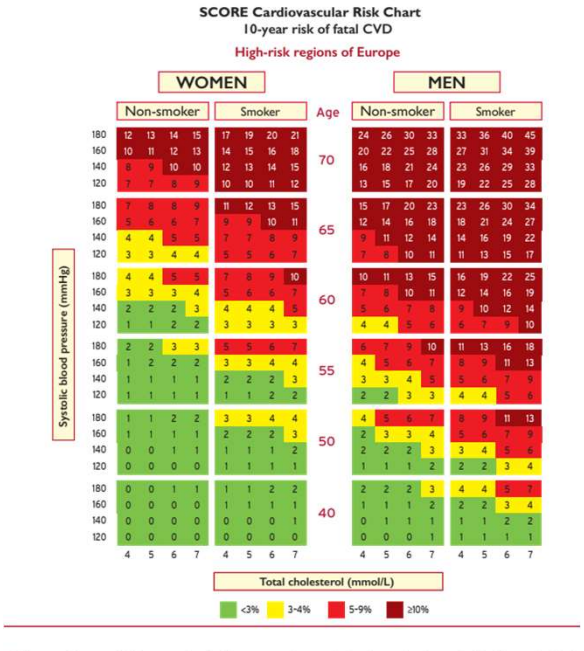
- pas d'exercice vigoureux dans les 24 dernières heures;
- pas de maladie intercurrente (fièvre, grippe…)

Refaire le bilan 1 à 12 semaines avant de démarrer le traitement (en dehors de la prévention secondaire)

Dyslipidémie et risque cardiovasculaire



SCORE 2
SCORE OP



Systematic Coronary Risk Estimation chart for European populations at high cardiovascular disease risk. The 10-year risk of fatal

SCORE

Estimation rapide du RCVX ++

RCV très haut	• MCVAS soit clinique, soit sans équivoque à l'imagerie : – antécédent de syndrome coronaire aigu (infarctus du myocarde ou angor instable), coronaropathie stable, revascularisation coronaire, AVC ou accident ischémique transitoire, artériopathie périphérique – à l'imagerie, plaque significative à la coronarographie ou au scanner coronaire (coronaropathie pluritronculaire avec au moins 2 artères majeures avec sténose > 50 %) ou à l'échographie carotide • Diabète avec atteinte d'organe cible (microalbuminurie, rétinopathie, neuropathie), ≥ 3 FDRCV ou début précoce d'un diabète de type 1 de longue durée (> 20 ans) • Néphropathie chronique sévère (DFG < 30 mL/min/1,73 m²) • SCORE (risque à 10 ans de MCV fatale) ≥ 10 % • Hypercholestérolémie familiale avec MCVAS ou un autre FDRCV majeur
RCV haut	• FDRCV à niveau nettement élevé, en particulier cholestérolémie totale > 8 mmol/L (3,1 g/L), C-LDL > 4,9 mmol/L (1,9 g/L) ou PA ≥ 180/110 mmHg • Hypercholestérolémie familiale sans autre FDRCV majeur • Diabète sans atteinte d'organe cible, durée ≥ 10 ans ou autre FDRCV • Néphropathie chronique modérée (DFG 30-59 mL/min/1,73 m²) • SCORE entre 5 % et 10 %
RCV modéré	• Diabétique jeune (type 1 : < 35 ans ; type 2 : < 50 ans), durée du diabète < 10 ans, pas d'autre FDRCV • SCORE entre 1 % et 5 %
RCV bas	• SCORE < 1 %

Maladie CVX établie?

Sténose artérielle à l'imagerie ?

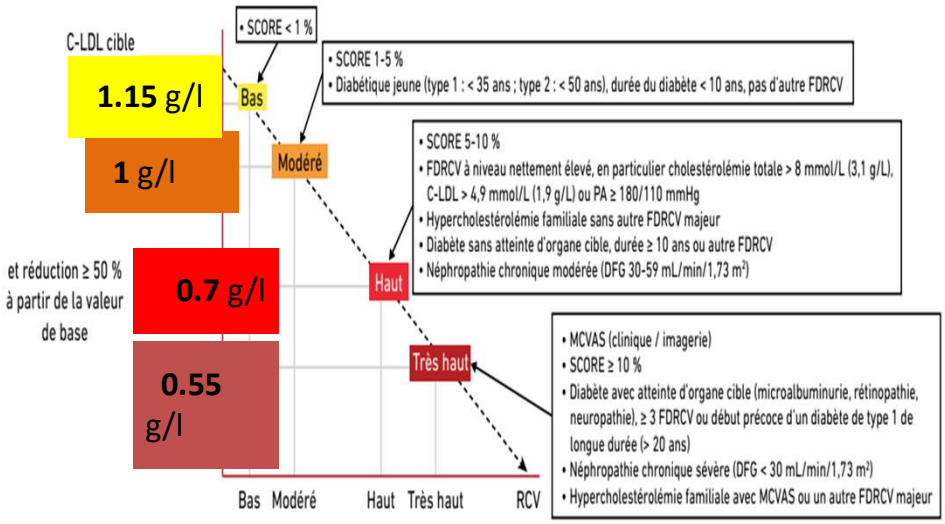
Diabète? Atteinte d'organe?

FDR majeur ? HTA sévère?

Maladie rénale chronique

OBJECTIFS +++

LDL- cholesterol ++++



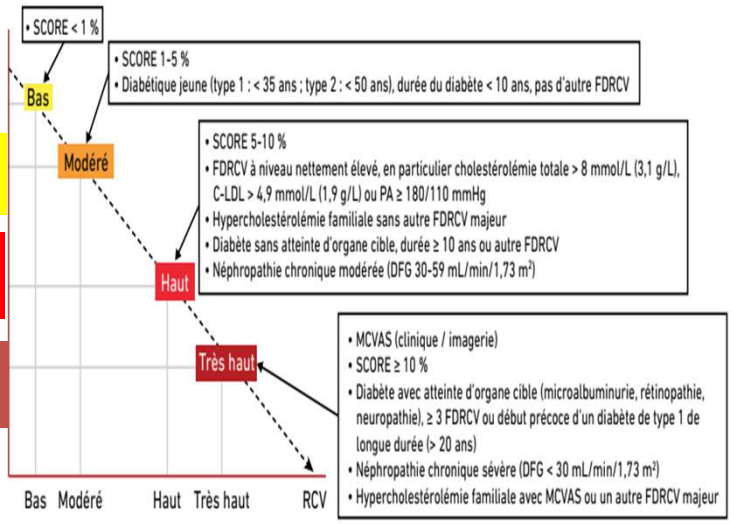
OBJECTIFS

Non-HDL cholesterol

1.3 g/l

1 g/l

0.85g/l



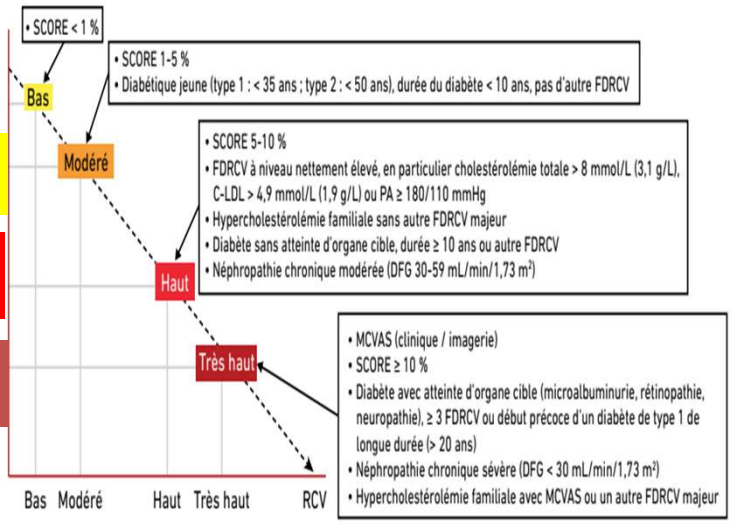
OBJECTIFS

Apo B

1 g/l

0.8 g/l

0.65g/l



Moyens

Stratégie d'intervention: en fonction du RCVx et du taux de LDL-C.

	RCV total (SCORE) %	C-LDL de base, mmol/L (g/L)					
		< 1,4 (0,55)	1,4-1,8 (0,55-0,70)	1,8-2,6 (0,7-1,0)	2,6-3,0 (1,0-1,16)	3,0-4,9 (1,16-1,9)	≥ 4,9 (1,9)
Prévention primaire	< 1 RCV bas	Conseils sur l'hygiène de vie				Intervention sur le mode de vie, envisager l'ajout d'un médicament en cas de non-contrôle	Intervention sur le mode de vie et traitement médicamenteux concomitant
	Classe, niveau de recommandation	I, C	I, C	I, C	I, C	IIa, A	IIa, A
	RCV modéré 1-5	Conseils sur l'hygiène de vie			Intervention sur le mode de vie, envisager l'ajout d'un médicament en cas de non-contrôle		Intervention sur le mode de vie et traitement médicamenteux concomitant
	Classe, niveau de recommandation	I, C	I, C	IIa, A	IIa, A	IIa, A	IIa, A
	RCV haut 5-10	Conseils sur l'hygiène de vie		Intervention sur le mode de vie, envisager l'ajout d'un médicament en cas de non-contrôle	Intervention sur le mode de vie et traitement médicamenteux concomitant		
	Classe, niveau de recommandation	IIa, A	IIa, A	IIa, A	I, A	I, A	I, A
	RCV très haut ≥ 10	Conseils sur l'hygiène de vie	Intervention sur le mode de vie, envisager l'ajout d'un médicament en cas de non-contrôle	Intervention sur le mode de vie et traitement médicamenteux concomitant			
	Classe, niveau de recommandation	IIa, B	IIa, A	I, A	I, A	I, A	I, A
Prévention secondaire	RCV très haut	Intervention sur le mode de vie, envisager l'ajout d'un médicament en cas de non-contrôle	Intervention sur le mode de vie et traitement médicamenteux concomitant				
	Classe, niveau de recommandation	IIa, A	I, A	I, A	I, A	I, A	I, A

Mesures hygiéno-diététiques

Toujours

STATINES +++

- Ezetimibe
- Anti-PCSK 9
- Fibrates
- Omega 3

Choix statine

?

Puissance des Statines

Table 10.2—High-intensity and moderate-intensity statin therapy*

High-intensity statin therapy (lowers LDL cholesterol by ≥50%)	Moderate-intensity statin therapy (lowers LDL cholesterol by 30–49%)
Atorvastatin 40–80 mg	Atorvastatin 10–20 mg
Rosuvastatin 20–40 mg	Rosuvastatin 5–10 mg
	Simvastatin 20–40 mg
	Pravastatin 40–80 mg
	Lovastatin 40 mg
	Fluvastatin XL 80 mg
	Pitavastatin 1–4 mg

Puissance des combinaisons

Intensity of lipid lowering treatment

Treatment	Average LDL-C reduction
Moderate intensity statin	≈ 30%
High intensity statin	≈ 50%
High intensity statin plus ezetimibe	≈ 65%
PCSK9 inhibitor	≈ 60%
PCSK9 inhibitor plus high intensity statin	≈ 75%
PCSK9 inhibitor plus high intensity statin plus ezetimibe	≈ 85%

Choix statine ?

Chez le diabétique

Age	Risk factors	Recommended statin intensity*
<40 years	None	None
	ASCVD risk factor(s)**	Moderate or high
	ASCVD	High
40–75 years	None	Moderate
	ASCVD risk factors	High
	ASCVD	High
	ACS and LDL cholesterol ≥50 mg/dL (1.3 mmol/L) or in patients with a history of ASCVD who cannot tolerate high-dose statins	Moderate plus ezetimibe
>75 years	None	Moderate
	ASCVD risk factors	Moderate or high
	ASCVD	High
	ACS and LDL cholesterol ≥50 mg/dL (1.3 mmol/L) or in patients with a history of ASCVD who cannot tolerate high-dose statins	Moderate plus ezetimibe

*In addition to lifestyle therapy. **ASCVD risk factors include LDL cholesterol ≥100 mg/dL (2.6 mmol/L), high blood pressure, smoking, chronic kidney disease, albuminuria, and family history of premature ASCVD.

Statine intense
Fortes doses

Choix statine

Post-SCA

Recommendations for lipid-lowering therapy in very-high-risk patients with acute coronary syndromes

Recommendations	Class[a]	Level[b]
In all ACS patients without any contraindication or definite history of intolerance, it is recommended that high-dose statin therapy is initiated or continued as early as possible, regardless of initial LDL-C values.[438,440,442]	I	A
Lipid levels should be re-evaluated 4–6 weeks after ACS to determine whether a reduction of ≥50% from baseline and goal levels of LDL-C <1.4 mmol/L (<55 mg/dL) have been achieved. Safety issues need to be assessed at this time and statin treatment doses adapted accordingly.	IIa	C
If the LDL-C goal is not achieved after 4–6 weeks with the maximally tolerated statin dose, combination with ezetimibe is recommended.[33]	I	B
If the LDL-C goal is not achieved after 4–6 weeks despite maximal tolerated statin therapy and ezetimibe, the addition of a PCSK9 inhibitor is recommended.[119,120]	I	B
In patients with confirmed statin intolerance or in patients in whom a statin is contraindicated, ezetimibe should be considered.	IIa	C
For patients who present with an ACS and whose LDL-C levels are not at goal, despite already taking a maximally tolerated statin dose and ezetimibe, the addition of a PCSK9 inhibitor early after the event (during hospitalization for the ACS event if possible) should be considered.	IIa	C

Statine intense Fortes doses

↓ 4-6 semaines

+/- Ezetemibe

↓ 4-6 semaines

+/- anti-PCSK9

Choix statine

Post-AVCI

Recommendations for lipid-lowering therapy for the prevention of atherosclerotic cardiovascular disease events in patients with prior ischaemic stroke

Recommendations	Class[a]	Level[b]
Patients with a history of ischaemic stroke or TIA are at very high-risk of ASCVD, particularly recurrent ischaemic stroke, so it is recommended that they receive intensive LDL-C-lowering therapy.[459,460]	I	A

© ESC 2019

→ Statine haute intensité

AOMI

Recommendations for lipid-lowering drugs in patients with peripheral arterial disease (including carotid artery disease)

Recommendations	Class[a]	Level[b]
In patients with PAD, lipid-lowering therapy, including a maximum tolerated dose of statin, plus ezetimibe or a combination with a PCSK9 inhibitor if needed, is recommended to reduce the risk of ASCVD events.[512,524]	I	A

© ESC 2019

→ **Statine** +/- Ezetemibe +/- anti PCSK9

Choix statine

IRC

Recommendations for lipid management in patients with moderate-to-severe (Kidney Disease Outcomes Quality Initiative stages 3–5) chronic kidney disease

Recommendations	Class[a]	Level[b]
It is recommended that patients with Kidney Disease Outcomes Quality Initiative stage 3–5[c] CKD are considered to be at high or very-high risk of ASCVD.[489–493]	I	A
The use of statins or statin/ezetimibe combination is recommended in patients with non-dialysis-dependent stage 3–5 CKD.[214,222,495,496]	I	A
In patients already on statins, ezetimibe, or a statin/ezetimibe combination at the time of dialysis initiation, continuation of these drugs should be considered, particularly in patients with ASCVD.	IIa	C
In patients with dialysis-dependent CKD who are free of ASCVD, commencement of statin therapy is not recommended.[220,221]	III	A

© ESC 2019

→ Statine +/- Ezetemibe

Hémodialysé sans maladie CVx établie = pas de statine

Hypertriglycéridémie

Recommendations	Class	Level
Statin treatment is recommended as the first drug of choice for reducing CVD risk in high-risk individuals with hypertriglyceridaemia (TG >2.3 mmol/L (>200 mg/dL)).	I	B
In high-risk (or above) patients with TG between 1.5 and 5.6 mmol/L (135–499 mg/dL) despite statin treatment, n-3 PUFAs (icosapent ethyl 2 x 2 g/day) should be considered in combination with statin.	IIa	B

→ Statine

→ Statine + Omega 3

Recommendations	Class	Level
In primary prevention patients who are at LDL-C goal with TG >2.3 mmol/L (>200 mg/dL), fenofibrate or bezafibrate may be considered in combination with statins.	IIb	B
In high-risk patients who are at LDL-C goal with TG >2.3 mmol/L (>200 mg/dL), fenofibrate or bezafibrate may be considered in combination with statins.	IIb	C

→ Statine + fibrate

En pratique quotidienne

5

Les effets secondaires: comment gérer ?

Toth et al. Lipids in Health and Disease (2019) 18:175
https://doi.org/10.1186/s12944-019-1099-z

Lipids in Health and Disease

RESEARCH Open Access

Long-term statin persistence is poor among high-risk patients with dyslipidemia: a real-world administrative claims analysis

Peter P. Toth[1,2*], Craig Granowitz[3], Michael Hull[4], Amy Anderson[4] and Sephy Philip[3]

46 000 patients

À 1 an: **50%** arrêtent leur statine

A 5 ans: **80%** arrêtent leur statine

Abstract

Background: A decade ago, statin persistence was < 50% after 1 year, and recent short-term analyses have revealed very little progress in improving statin persistence, even in patients with a prior cardiovascular (CV) event. Data on longer-term statin persistence are lacking. We measured long-term statin persistence in patients with high CV risk.

Methods: This retrospective administrative claims analysis of the Optum Research Database included patients aged ≥ 45 years with diabetes and/or atherosclerotic CV disease (ASCVD) who had a statin prescription filled in 2010. It included an elevated triglycerides (TG) cohort of patients with index date in 2010 and TG ≥ 150 mg/dL ($n = 23,181$) and a propensity-matched comparator cohort with TG < 150 mg/dL and high-density lipoprotein cholesterol > 40 mg/dL ($n = 23,181$). Both cohorts were followed for ≥ 6 months up to March 2016.

Results: The probability of remaining on a prescription fill for index statin therapy was 47% after 1 year and 19% after 5 years in both cohorts. Statin persistence was worse among women than men, and among younger versus older patients ($P < 0.001$ for all comparisons). After 5 years, the probability of remaining on a prescription fill for index statin was < 25% across all subgroups assessed including patients with and without baseline revascularization, heart failure, peripheral artery disease and renal disease. Similar results were observed in a subcohort analysis of patients with TG 200–499 mg/dL.

Conclusions: Long-term statin persistence after 5 years is alarmingly low (< 25%) and is a public health concern.

Keywords: Statin, Triglycerides, Persistence, Discontinuation, Atherosclerotic cardiovascular disease, Diabetes

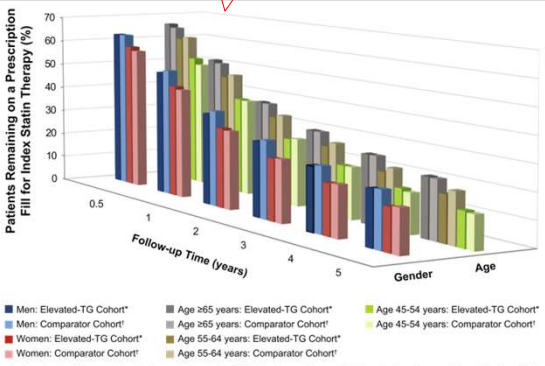


Fig. 2 Persistence to Index Statin Therapy by Patients With High CV Risk According to TG Level, Gender, and Age. Kaplan-Meier analysis. Clustered *P* values were calculated using cohort and gender. See Tables 4 and 5 for *P* values. $P < 0.001$ for comparisons between men vs women and younger vs older patients. *TG ≥150 mg/dL. †TG < 150 mg/dL and HDL-C > 40 mg/dL; propensity score matched to elevated-TG cohort. CV, cardiovascular; HDL-C, high-density lipoprotein cholesterol; TG, triglycerides

ADVANCING HIGH VALUE HEALTH CARE

THE AMERICAN JOURNAL of MEDICINE®

Statin Intolerance and Noncompliance: An Empiric Approach

Scott M. Grundy, MD, PhD,[a,b,c] Gloria L. Vega, PhD[a,c,d]

The American Journal of Medicine, Vol 135, No 3, March 2022

1- Facteurs Medico économiques ➔ 50 % des arrêt du traitement

2- effet Nocébo (media, réseaux sociaux…)

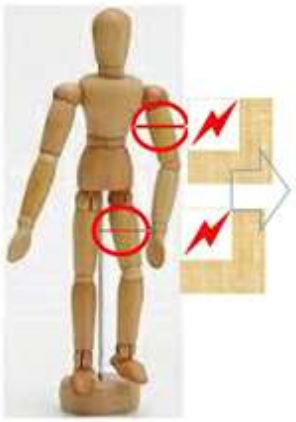
3- Troubles musculo-squelettiques mis sur le compte des statines **(1/3 des patients)**

lombalgie, arthrose, traumatismes musculo-squelettiques,
Fibromyalgie, tendinite

4- vraie toxicité des statines

Toxicité musculaire ++
Autres: transaminases ,
diabète,
protéinurie
troubles cognitifs
pancréatite
neuropathie périphérique

Toxicité musculaire



Term	CK	Incidence
Myalgia	normal	2-11%*
Myositis	> 10x ULN	1 : 10 000**
Rhabdo-myolysis	> 40x ULN	1 : 100 000**

* Observational
** RCTs

Stroes et al, European Heart Journal 2015; 36: 1012–1022.
Pedersen PR Arch Intern Med 1996; 156: 2085.
Tobert JA Am J Cardiol 1988; 62:28J.

Esc guidelines 2019

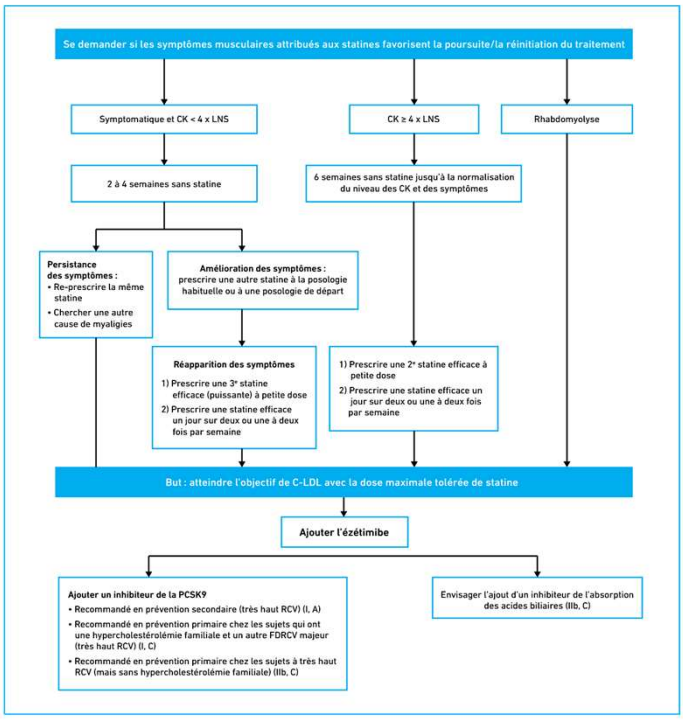


Fig. 8 : Algorithme pour le traitement des symptômes musculaires au cours d'un traitement par statine.

Conclusion

En pratique quotidienne

1- être convaincu et convaincant: « la dyslipidémie est un réel FDRcvX »

2- **LDL CHOLESTEROL** reste la fraction lipidique la plus pertinente en pratique.

3- le seuil et l'objectif du traitement dépendent du profil de risque du patient

4- les **STATINES** sont encore le pilier du traitement.

5- les statine à **haute intensité (ATORVA, ROSUVA)** pour les patient à **haut risque.**

6- la **TOLÉRANCE** est généralement bonne.

7- Ne pas se précipiter à arrêter la statine en cas d'intolérance

AMBM
Association Marocaine de Biologie Médicale

MERCI POUR VOTRE ATTENTION

Mai 2024

PRÉSENTÉ PAR :
PR.M.SABRY