APPAC
6/7/8 JUIN 2018
Palais des Congrès
BIARRITZ
20e édition

Le cœur du dialysé

Y. Dimitrov CH Haguenau

Conflits d'intérêt: aucun

Bonjour

Je vous confirme votre lecture à l'APPAC le vendredi 8 juin à 10h40.

Session : LE COEUR DU DYALISE
Votre partie :
Lecture
Durée d'intervention :
25 minutes

Un petit cas clinique

M. X, dialysé, ACFA, HTA

- **CARDIOLOGUE**
  - **IEC**
  - **AVK**
  - **Statine**

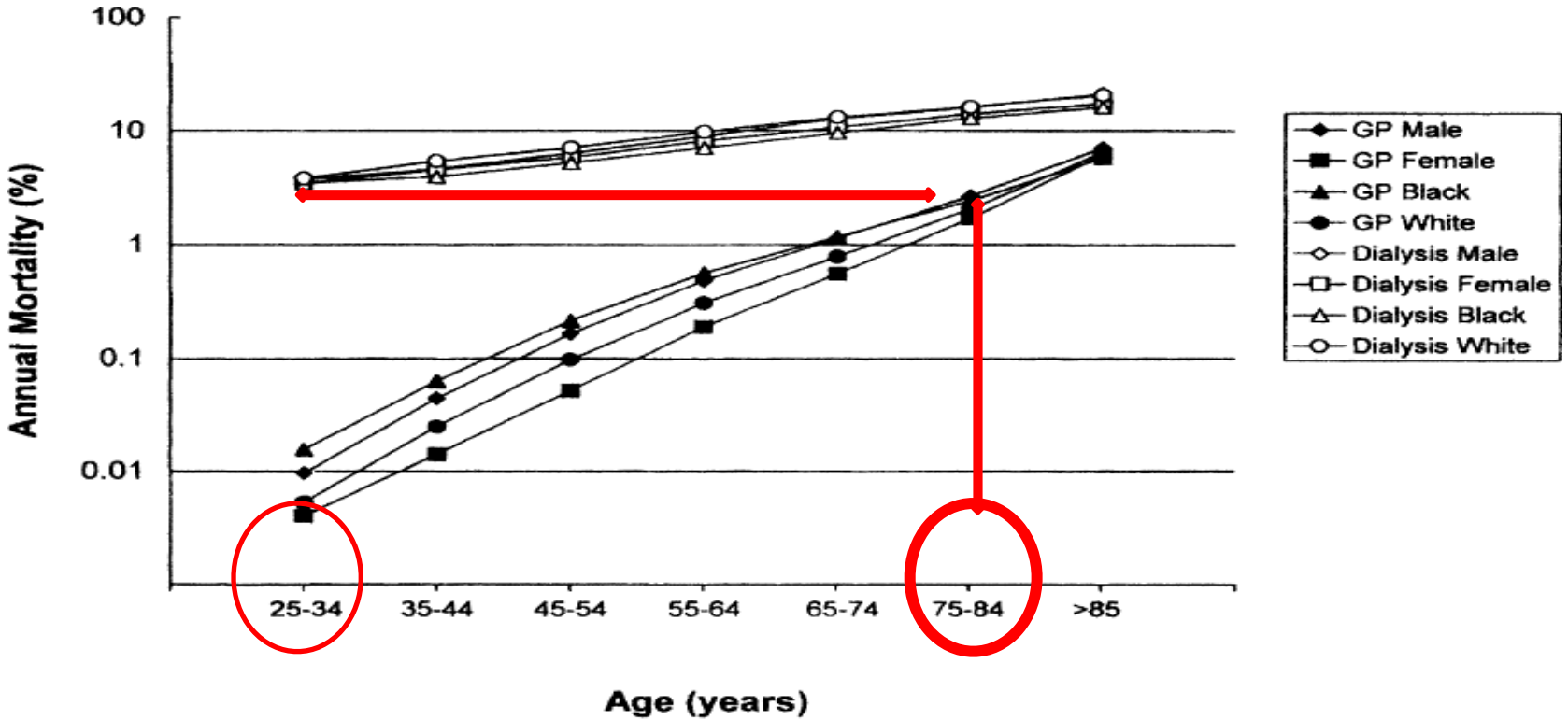
- NEPHROLOGUE
  - ~~IEC~~ →Beta-bloquant
  - ~~AVK~~
  - ~~Statine~~

Maladie CV chez le dialysé

- **En début de dialyse**
  - HVG 75 %
  - Insuffisance cardiaque 30 % (NYHA 3-4 11 %)
  - Angor 20 %
  - Coronaropathie 27 % (IDM 11 %)

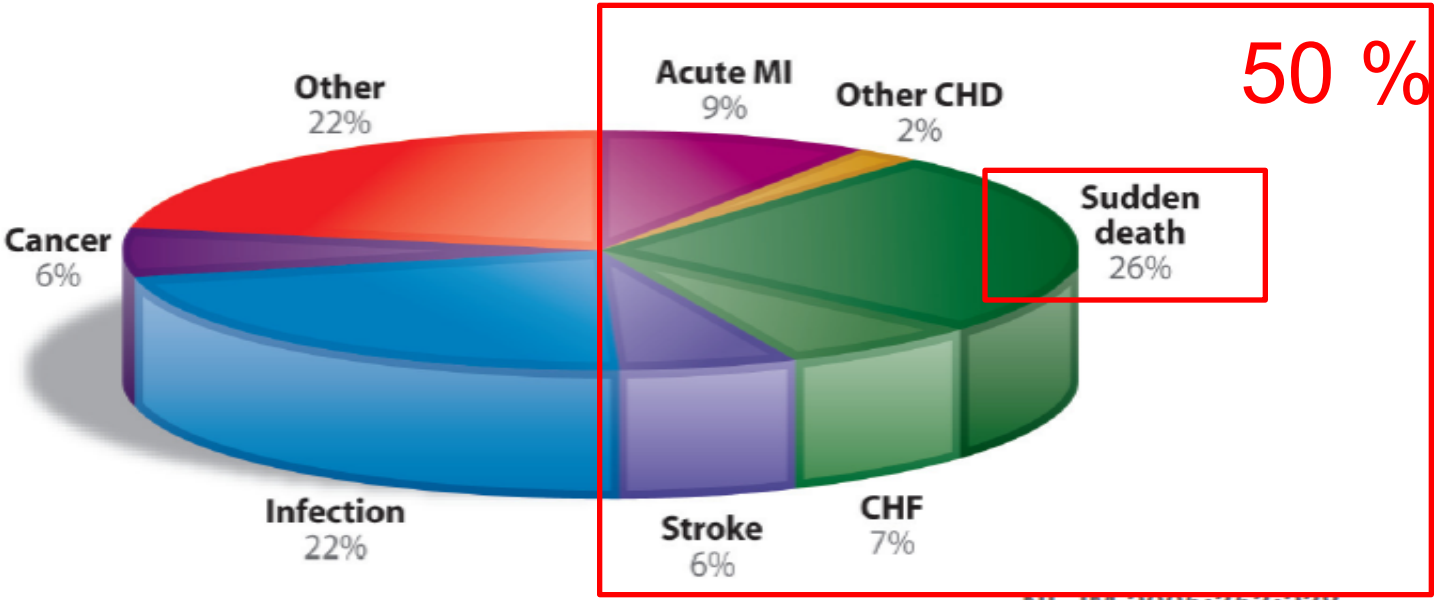
- **Trouble du rythme 25 %**
- **AVC 12 %**
- **AMI 12 %**

Mortalité en dialyse



Causes de décès

T2DM



NEJM 2005;353:238
JASN 2008;19:1065

Le cœur du dialysé est très différen

- HTA
- ACFA
- Hyperlipémie

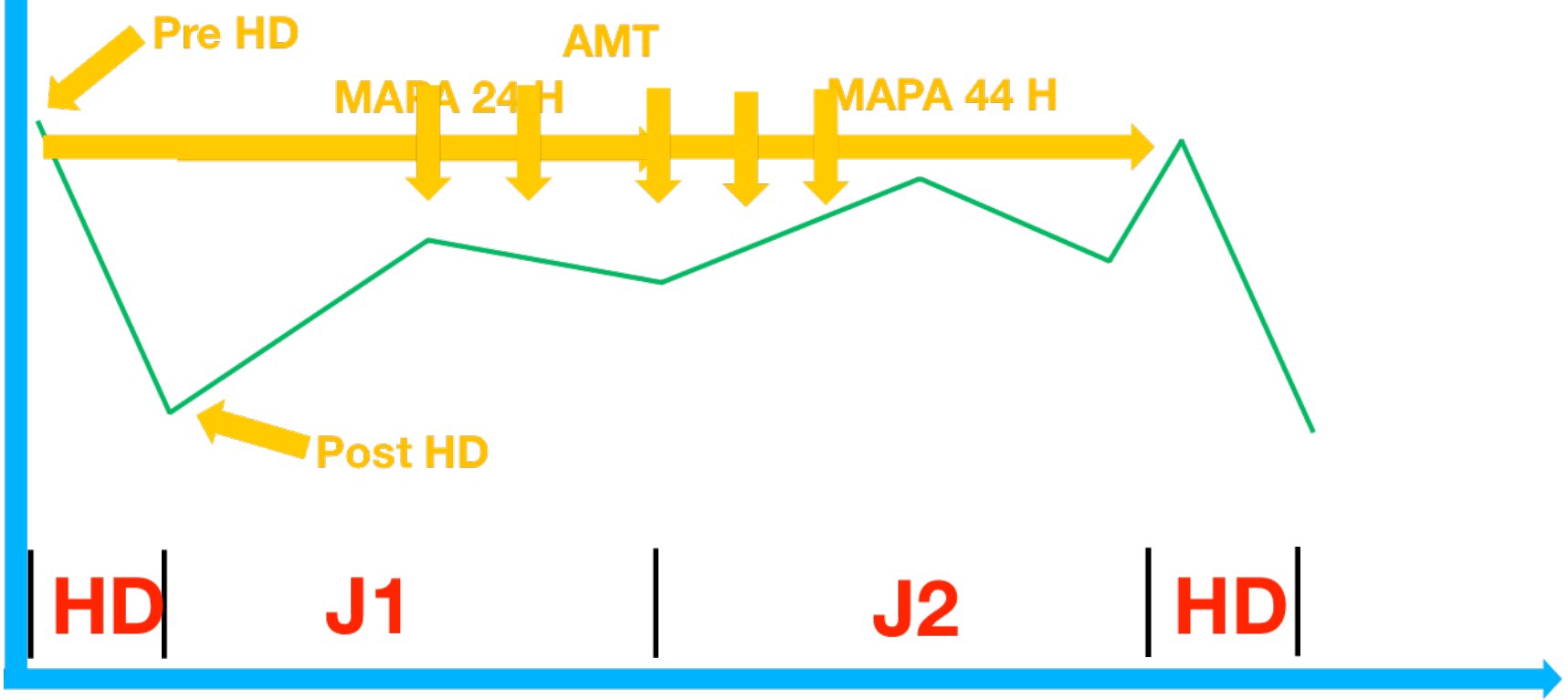
Prévalence HTA

TABLE 2. Prevalence, treatment and control of hypertension in hemodialysis patients

Reference	Year	*N*	Definition of hypertension	Prevalence of hypertension (%)	BP treatment among hypertensive patients (%)	BP control among hypertensive patients (%)
Salem [55]	1995	649	Prehemodialysis MAP $\geq$ 114 mmHg or use of antihypertensive agents	71.9	81.5	48.6
Rahman *et al.* [60]	1999	489	Prehemodialysis SBP $\geq$ 140 mmHg and/or DBP $\geq$ 90 mm	87.7	93.2	71.1
Agarwal *et al.* [1]	2003	2535	1-week average prehemodialysis SBP $>$ 150 mmHg and/or DBP $>$ 85 mmHg, or use of antihypertensive agents	85.8	88.4	30.3
Agarwal [56]	2011	369	44-h interdialytic ambulatory SBP $\geq$ 135 mmHg and/or DBP $\geq$ 85 mmHg or use of antihypertensive medications	82	89	38

MAP, mean arterial pressure.

Profil tensionnel du dialysé



HTA et mortalité CV

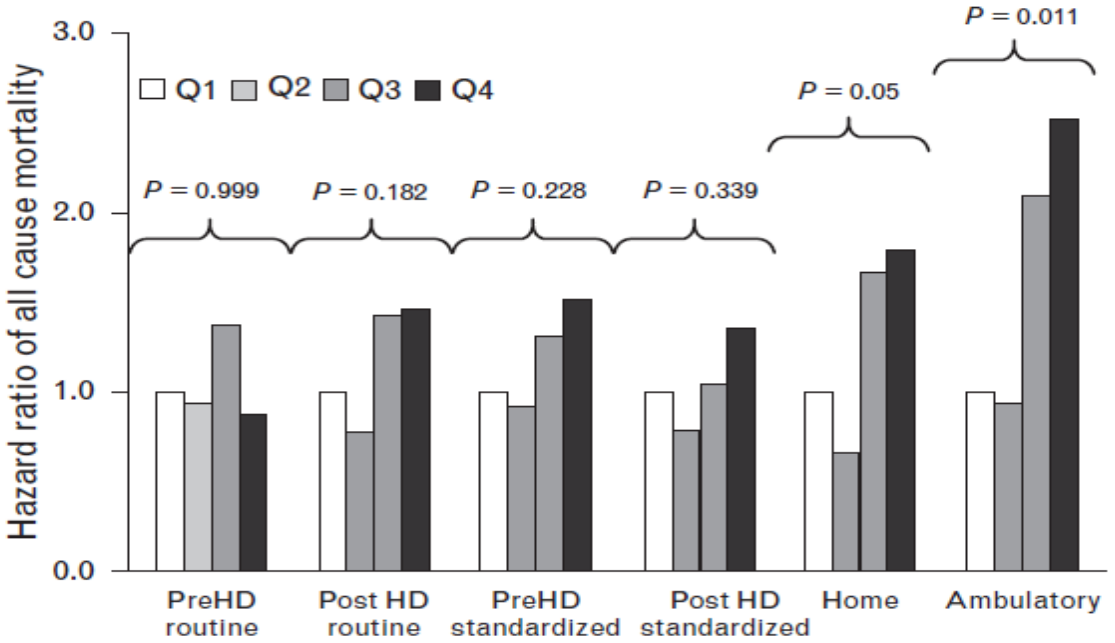


FIGURE 1 Hazard ratios for all-cause mortality for quartiles of predialysis, postdialysis, home and ambulatory SBP. Higher levels of home blood pressure and ambulatory blood pressure were significantly associated with mortality, whereas predialysis and postdialysis blood pressure was not. *P* values are those reported for linear trend. HD, hemodialysis; and Q, quartile. Reproduced with permission [3].

Multiphasic effects of blood pressure on survival in hemodialysis patients

CrossMark

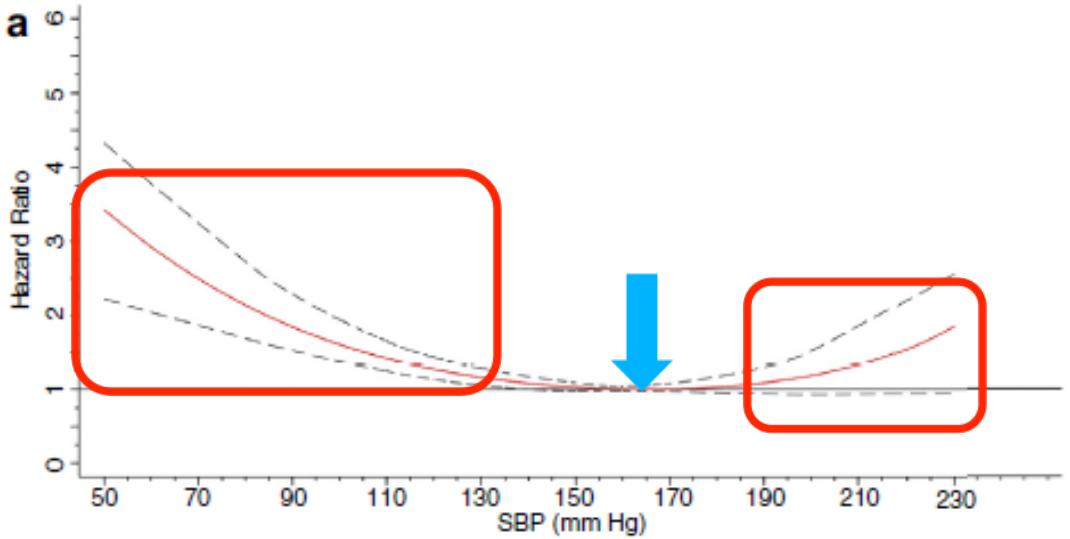
OPEN

Thierry Hannedouche[1], Hubert Roth[2], Thierry Krummel[1], Gérard M. London[3], Guillaume Jean[4], Jean-Louis Bouchet[5], Tilman B. Drüeke[6] and Denis Fouque[7]; on behalf of the French Observatory[8]

9333 dialysés

PA pre HD

Suivi 550 jours



Kidney International (2016) 90, 674–684;

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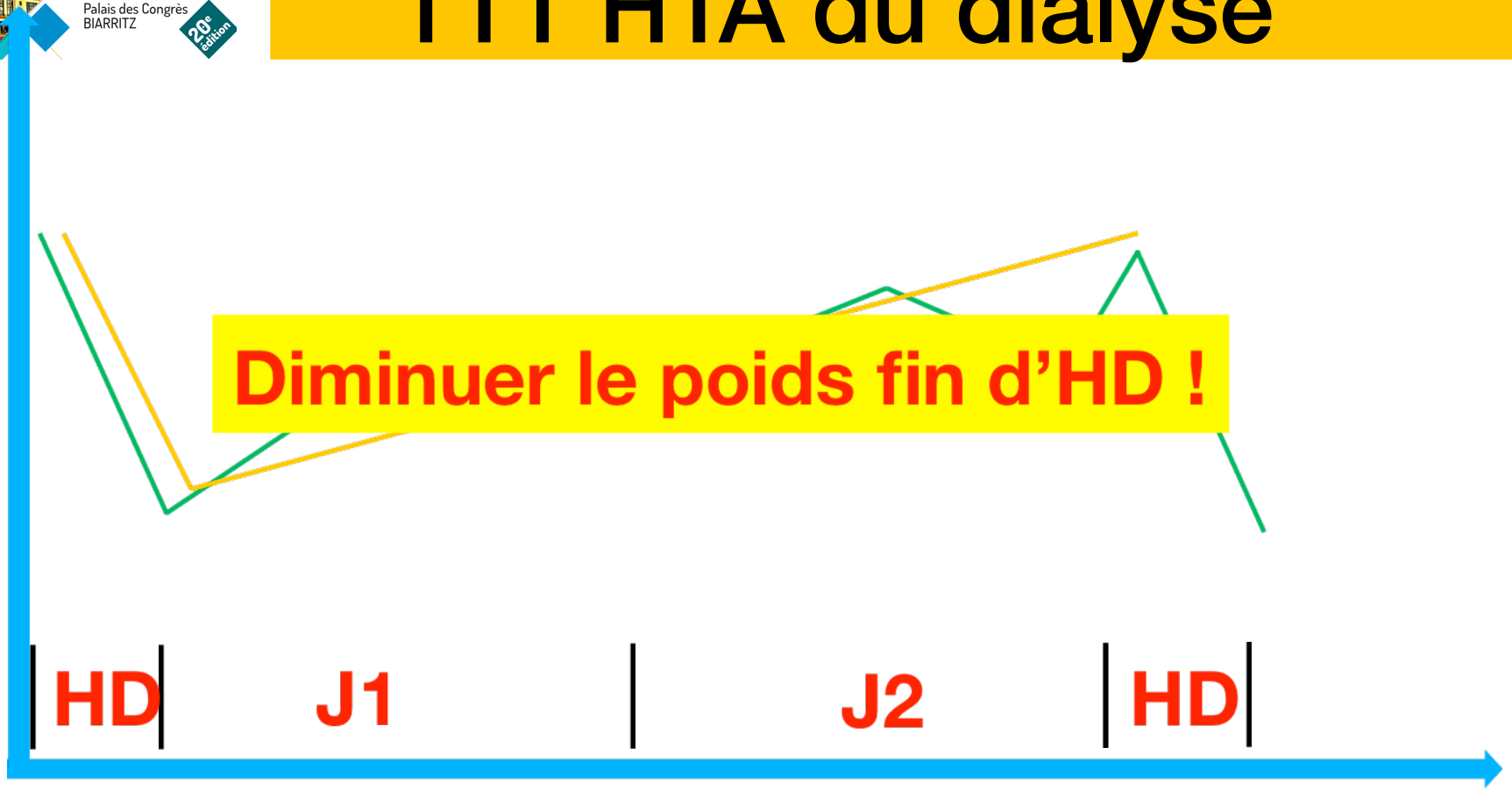
TTT HTA du dialysé

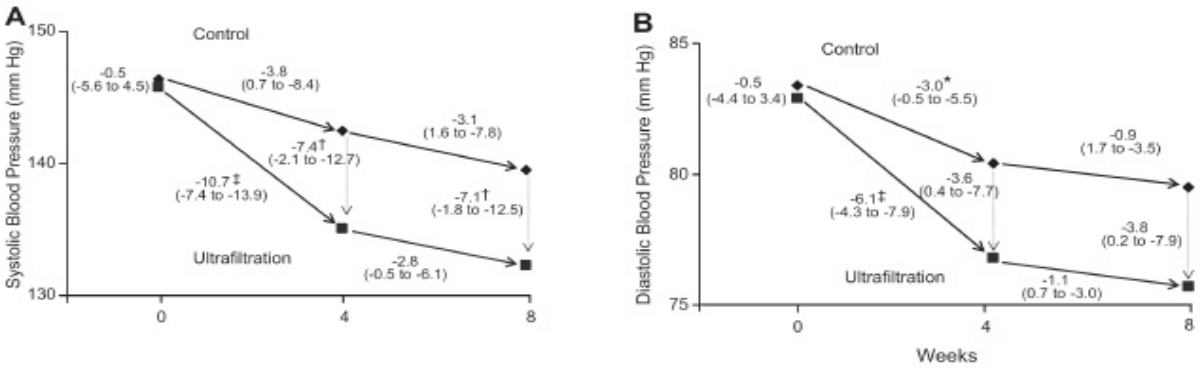
Effet inconstant du TTT de l'HTA sur la mortalité

TTT HTA du dialysé



TTT HTA du dialysé

The effect of dry weight reduction on interdialytic ambulatory systolic and diastolic BP in hypertensive hemodialysis pts.



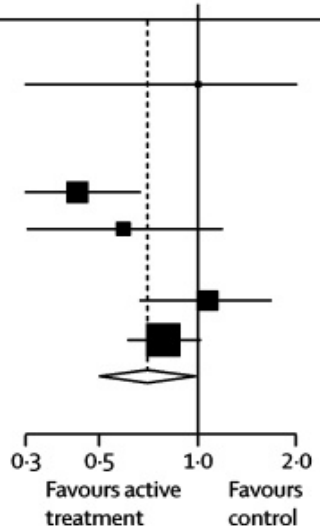
Agarwal et al. Hypertension 2009; 53: 500-507

TTT HTA du dialysé

Risk of cardiovascular mortality for blood pressure lowering treatment vs control regimens

Cardiovascular mortality			
Li et al (2003)[17]	2/30	2/30	1·00 (0·15–6·64)
Takahashi et al (2006)[19]	NR	NR	..
Tepel et al (2008)[21]	NR	NR	..
Cice et al (2003)[10]	17/58	38/56	0·43 (0·28–0·67)
Suzuki et al (2008)[20]	12/183	20/183	0·60 (0·30–1·19)
Nakao et al (2007)[22]	NR	NR	..
Zannad et al (2006)[11]	31/196	30/201	1·05 (0·67–1·68)
Cice et al (2006)[18]	59/151	75/152	0·80 (0·61–1·02)
Overall	**121/618**	**165/622**	**0·71 (0·50–0·99)**

Test for heterogeneity: I^2=54·6%, Q=8·8, p=0·07

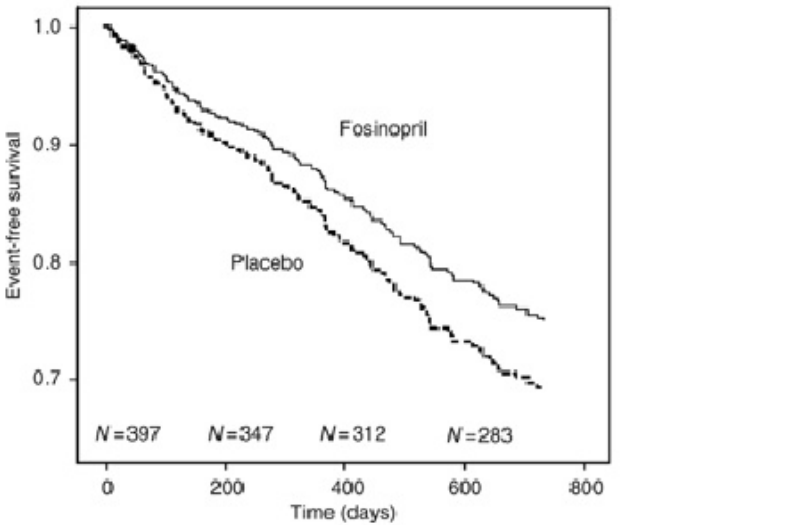


Lancet Published Online February 26, 2009

TTT HTA du dialysé

In the intention to treat analysis there was no significant difference in the primary end point between the two groups (RR=0.93; 95%CI 0.68 to 1.26; P=0.35)

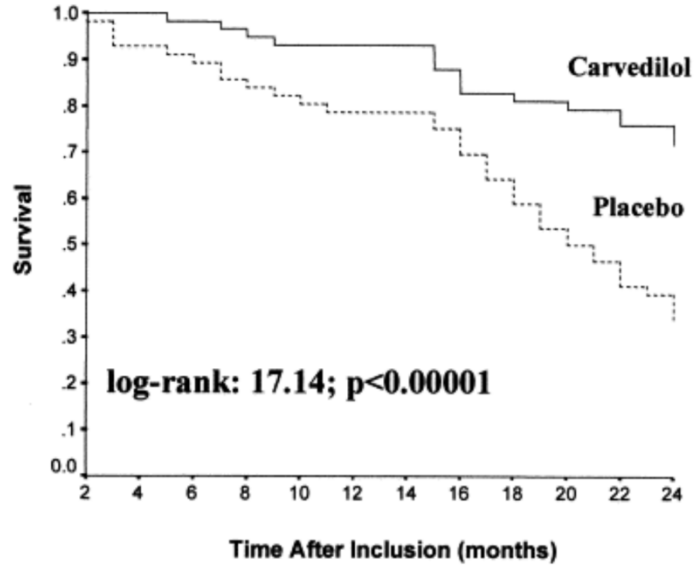
Fosinopril in Dialysis (FOSIDIAL)Study

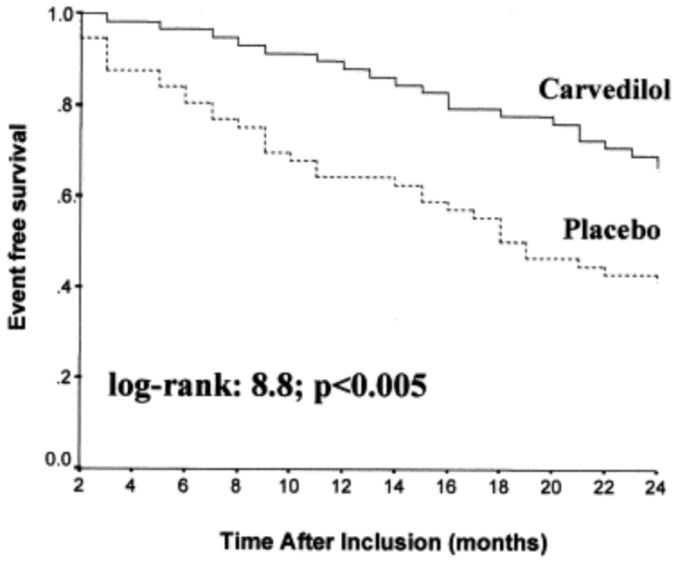


Zannad et al. Kidney International 2006;70:1318-1324

TTT HTA du dialysé

Carvedilol augmente la survie à 2 ans de patients hémodialysés porteur d'une cardiomyopathie dilatée: étude prospective randomisée vs placébo





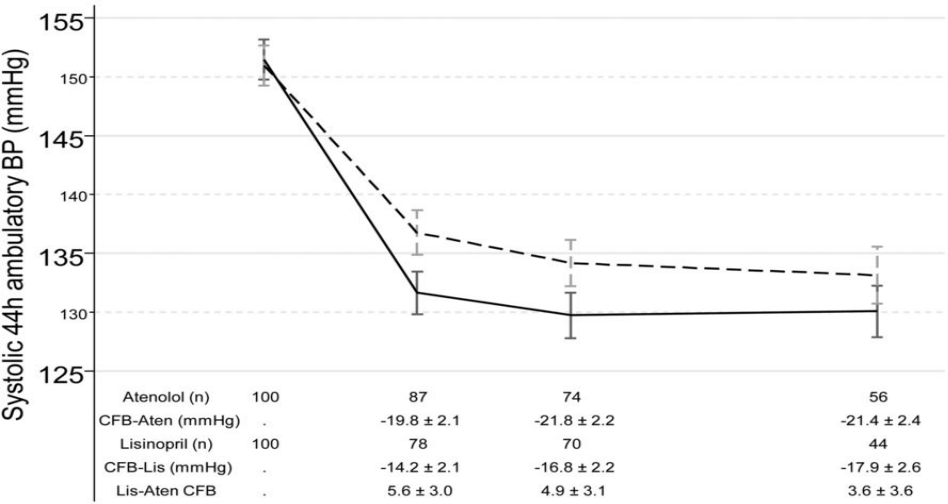
J Am Coll Cardiol. 2003;41(9):1438-1444.

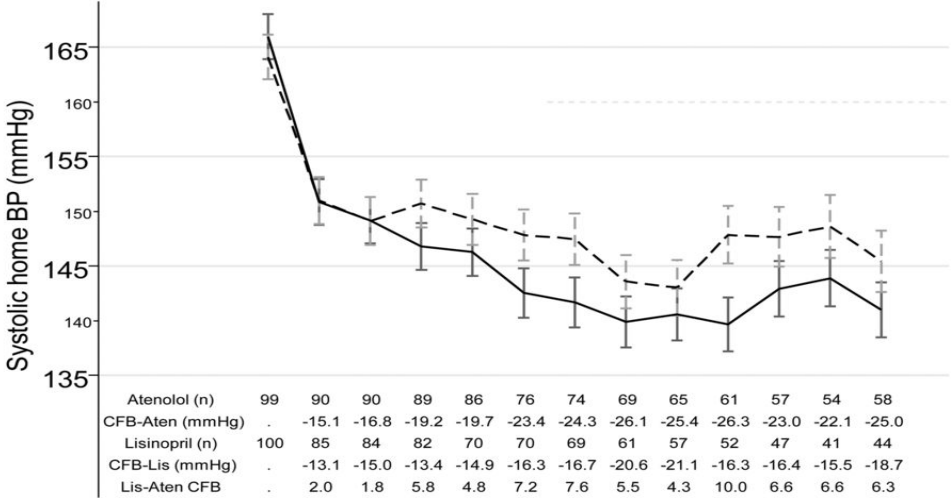
TTT HTA du dialysé

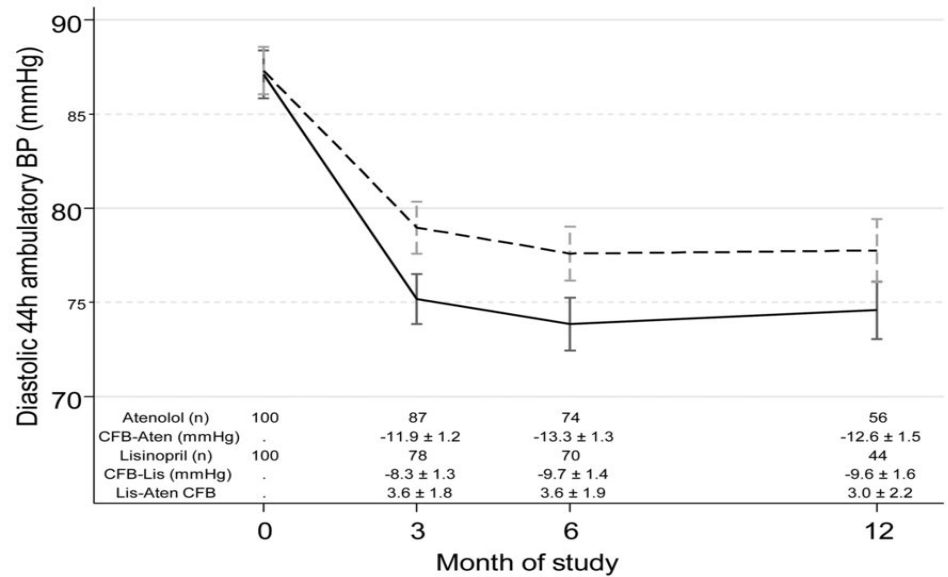
Hypertension in hemodialysis patients treated with atenolol or lisinopril: a randomized controlled trial

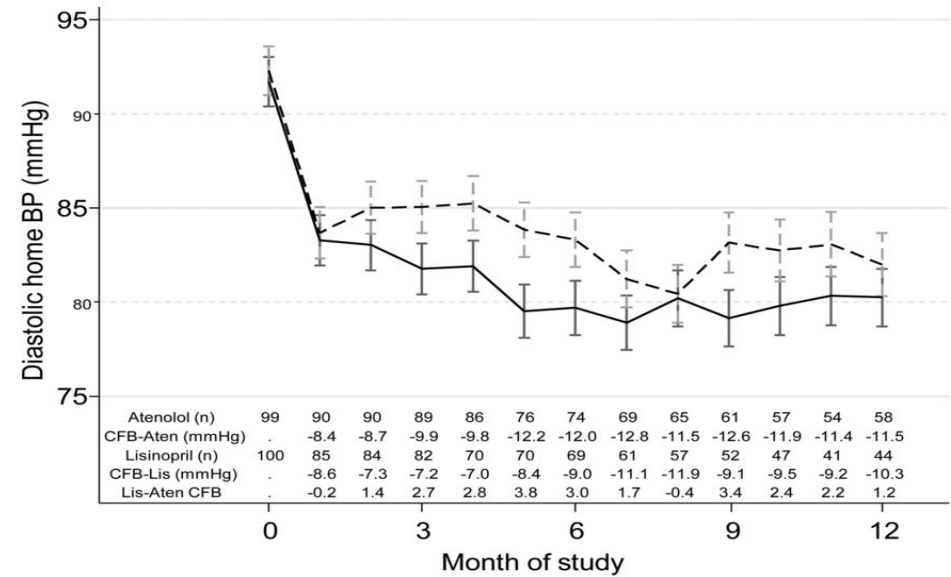
Rajiv Agarwal, Arjun D. Sinha, Maria K. Pappas, Terri N. Abraham and Getachew G. Tegegne

Clinical characteristic	Atenolol (*n* = 100)	Lisinopril (*n* = 100)
Age (years)	52.2 ± 11.7	53.1 ± 13.5
Male sex, *n* (%)*	73 (73)	58 (58)
Blacks, *n* (%)	86 (86)	86 (86)
Diabetes mellitus, *n* (%)	29 (29)	27 (27)
Hypertension, *n* (%)	54 (54)	46 (46)
Dialysis vintage (years)	4.2 ± 4.4	3.9 ± 4.2
Anuric, *n* (%)	68 (68)	66 (66)
Hospitalized heart failure, *n* (%)	25 (25)	37 (37)
Coronary artery disease, *n* (%)	22 (22)	31 (31)
Coronary revascularization, *n* (%)**	4 (4)	15 (15)
Cerebrovascular disease, *n* (%)	13 (13)	20 (20)
Peripheral vascular disease, *n* (%)	10 (10)	11 (11)


Systolic 44h ambulatory BP (mmHg)
155
150
145
140
135
130
125
Atenolol (n) 100 87 74 56
CFB-Aten (mmHg) . -19.8 ± 2.1 -21.8 ± 2.2 -21.4 ± 2.4
Lisinopril (n) 100 78 70 44
CFB-Lis (mmHg) . -14.2 ± 2.1 -16.8 ± 2.2 -17.9 ± 2.6
Lis-Aten CFB . 5.6 ± 3.0 4.9 ± 3.1 3.6 ± 3.6

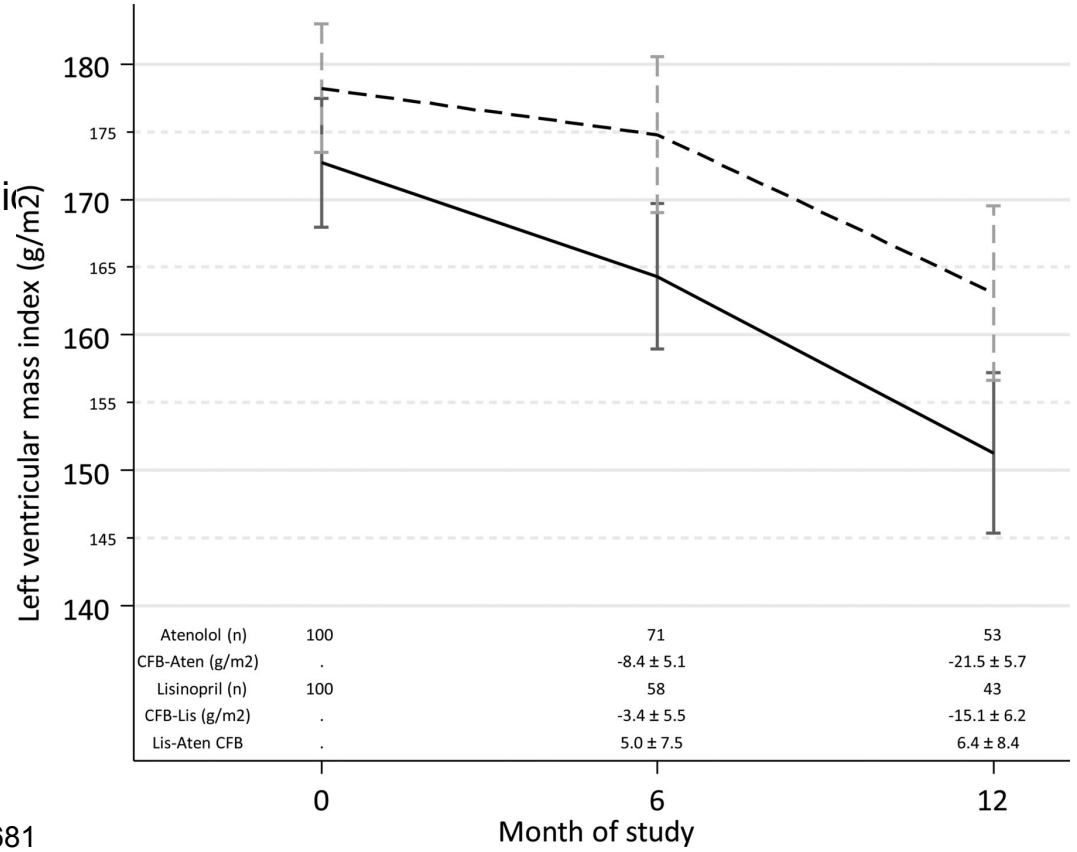

Systolic home BP (mmHg)
165
160
155
150
145
140
135
Atenolol (n) 99 90 90 89 86 76 74 69 65 61 57 54 58
CFB-Aten (mmHg) . -15.1 -16.8 -19.2 -19.7 -23.4 -24.3 -26.1 -25.4 -26.3 -23.0 -22.1 -25.0
Lisinopril (n) 100 85 84 82 70 70 69 61 57 52 47 41 44
CFB-Lis (mmHg) . -13.1 -15.0 -13.4 -14.9 -16.3 -16.7 -20.6 -21.1 -16.3 -16.4 -15.5 -18.7
Lis-Aten CFB . 2.0 1.8 5.8 4.8 7.2 7.6 5.5 4.3 10.0 6.6 6.6 6.3


Diastolic 44h ambulatory BP (mmHg)
90
85
80
75
70
Atenolol (n) 100 87 74 56
CFB-Aten (mmHg) . -11.9 ± 1.2 -13.3 ± 1.3 -12.6 ± 1.5
Lisinopril (n) 100 78 70 44
CFB-Lis (mmHg) . -8.3 ± 1.3 -9.7 ± 1.4 -9.6 ± 1.6
Lis-Aten CFB . 3.6 ± 1.8 3.6 ± 1.9 3.0 ± 2.2
0
3
6
12
Month of study


Diastolic home BP (mmHg)
95
90
85
80
75
Atenolol (n) 99 90 90 89 86 76 74 69 65 61 57 54 58
CFB-Aten (mmHg) . -8.4 -8.7 -9.9 -9.8 -12.2 -12.0 -12.8 -11.5 -12.6 -11.9 -11.4 -11.5
Lisinopril (n) 100 85 84 82 70 70 69 61 57 52 47 41 44
CFB-Lis (mmHg) . -8.6 -7.3 -7.2 -7.0 -8.4 -9.0 -11.1 -11.9 -9.1 -9.5 -9.2 -10.3
Lis-Aten CFB . -0.2 1.4 2.7 2.8 3.8 3.0 1.7 -0.4 3.4 2.4 2.2 1.2
0
3
6
9
12
Month of study

TTT HTA du dialysé

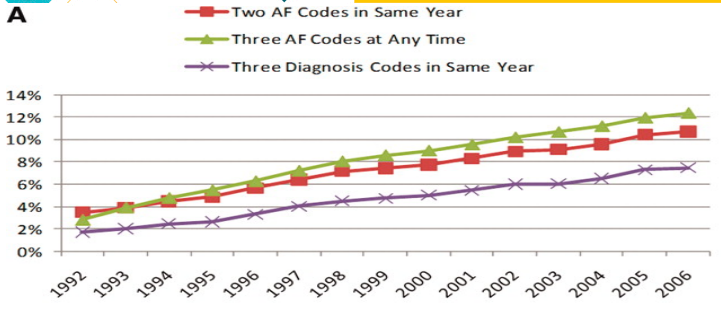
Time course of change in echocardiographic LVMI. At 12 months, each group had an improvement in LVMI (P = 0.015 for lisinopril and P <0.001 for atenolol at 12 months).

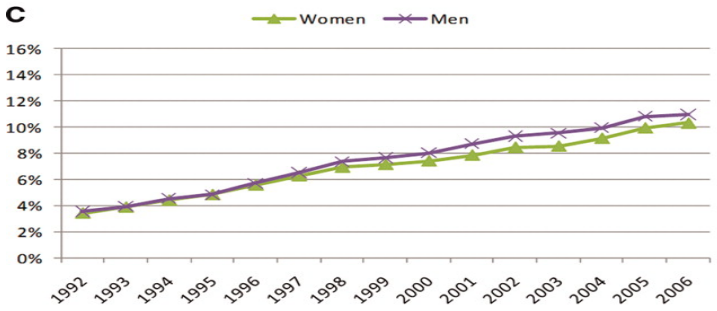


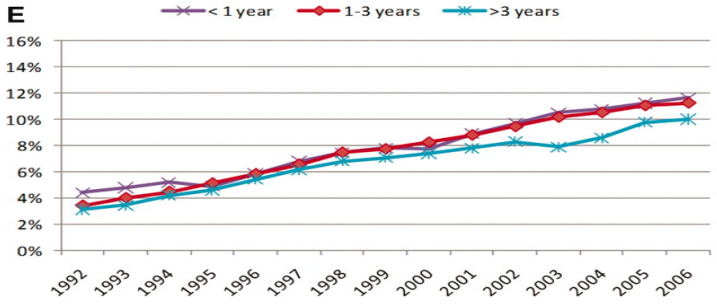
Agarwal R et al. Nephrol. Dial. Transplant. 2014;29:672-681

ACFA / AVK

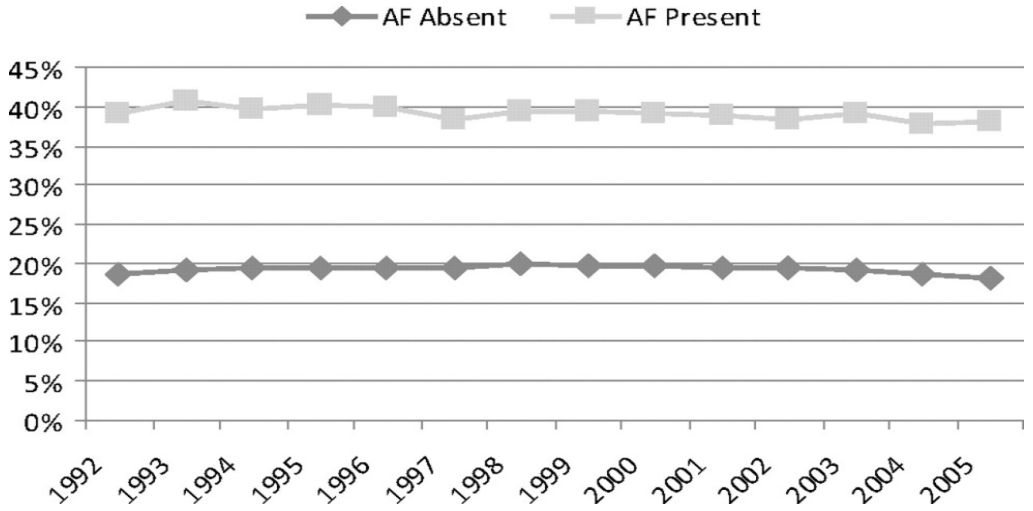
Prévalence de la fibrillation auriculaire en hémodialyse, (US1992 to 2006).







Mortalité annuelle en hémodialyse



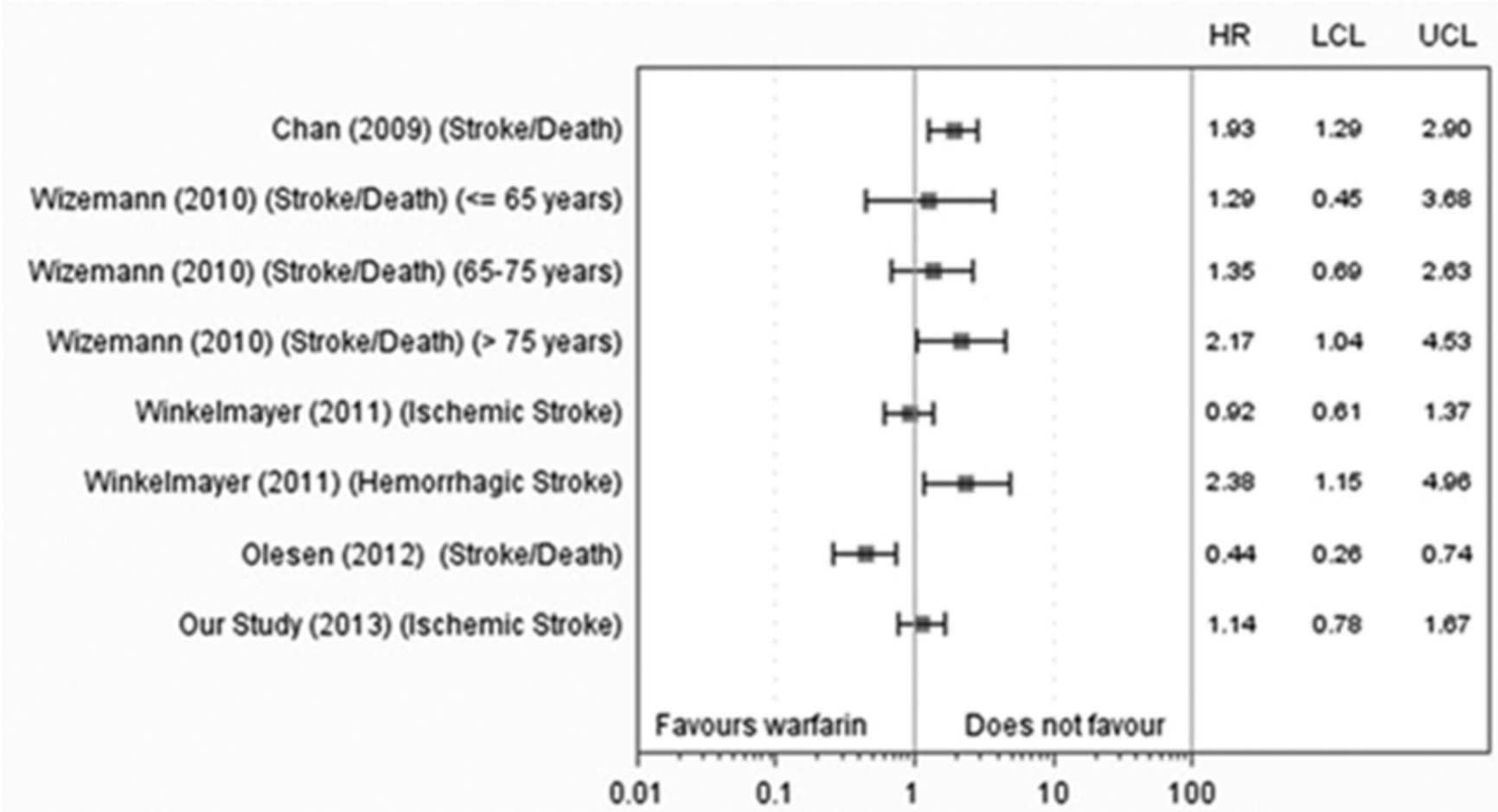
Winkelmayer W C et al. JASN 2011;2

Fibrillation auriculaire, Warfarine : risque d'AVC et d'hémorragie

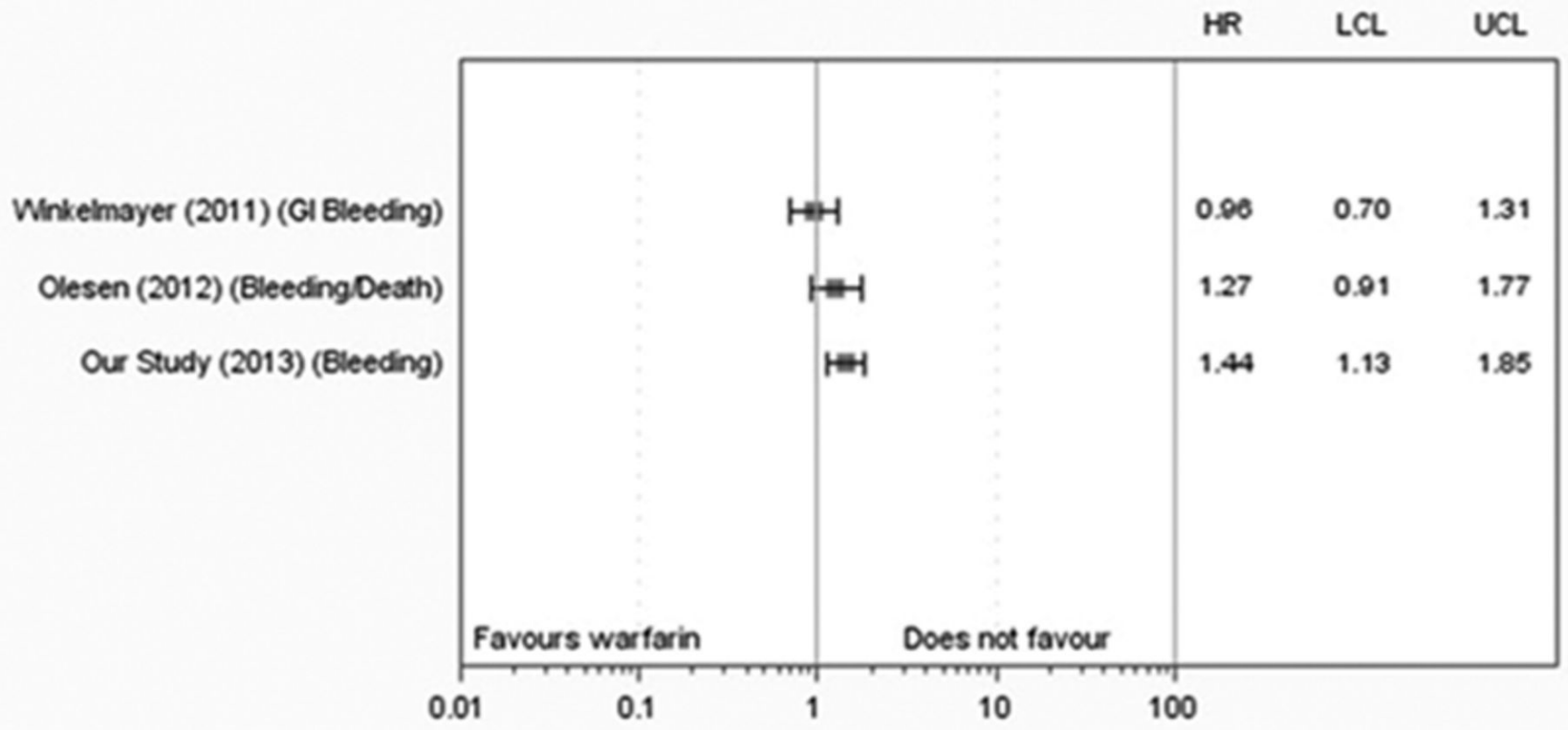
Patients avec FA		HR (95%CI)	Score de propension HR (95%)
Hémodialysés (n=1626)	AVC	1.14(0.78-1.67)	1.17(0.79-1.75)
	Hémorragie	1.44(1.13-1.85)	1.41(1.09-1.81)
Non-hémodialysés (n=204.210)	AVC	0.87(0.85-0.90)	0.89(0.87-0.92)
	Hémorragie	1.19(1.16-1.22)	1.20(1.17-1.23)

Shah; Circulation 2014 April

AVK et risque d'AVC chez l'hémodialysé en fibrillation auriculaire.



AVK et risque hémorragique chez l'hémodialysé en fibrillation auriculaire.



Anti-coagulation « naturelle » en HD

- Héparine à chaque séance
- Dialyse de molécules coagulantes
- Thrombopénie/pathie

Recommandations officielles

- **EGFR > 30 ml par minute**: Nous **<u>recommandons</u>** que ces patients reçoivent un traitement anti-thrombotique en fonction de leur score$CHAD_2$ tel qu'indiqué dans les recommandations pour les patients ayant une fonction rénale normale **[Forte recommandation, données probantes de haute qualité].**

- **EGFR 15-30 ml par minute et non dialysé:** Nous **<u>suggérons</u>** que ces patients reçoivent un traitement anti-thrombotique en fonction de leur score $CHAD_2$ tel qu'indiqué pour les patients ayant une fonction rénale normale. Warfarin est le traitement de préférence pour ces patients. **[Recommandation conditionnelle, preuves de faible qualité].**

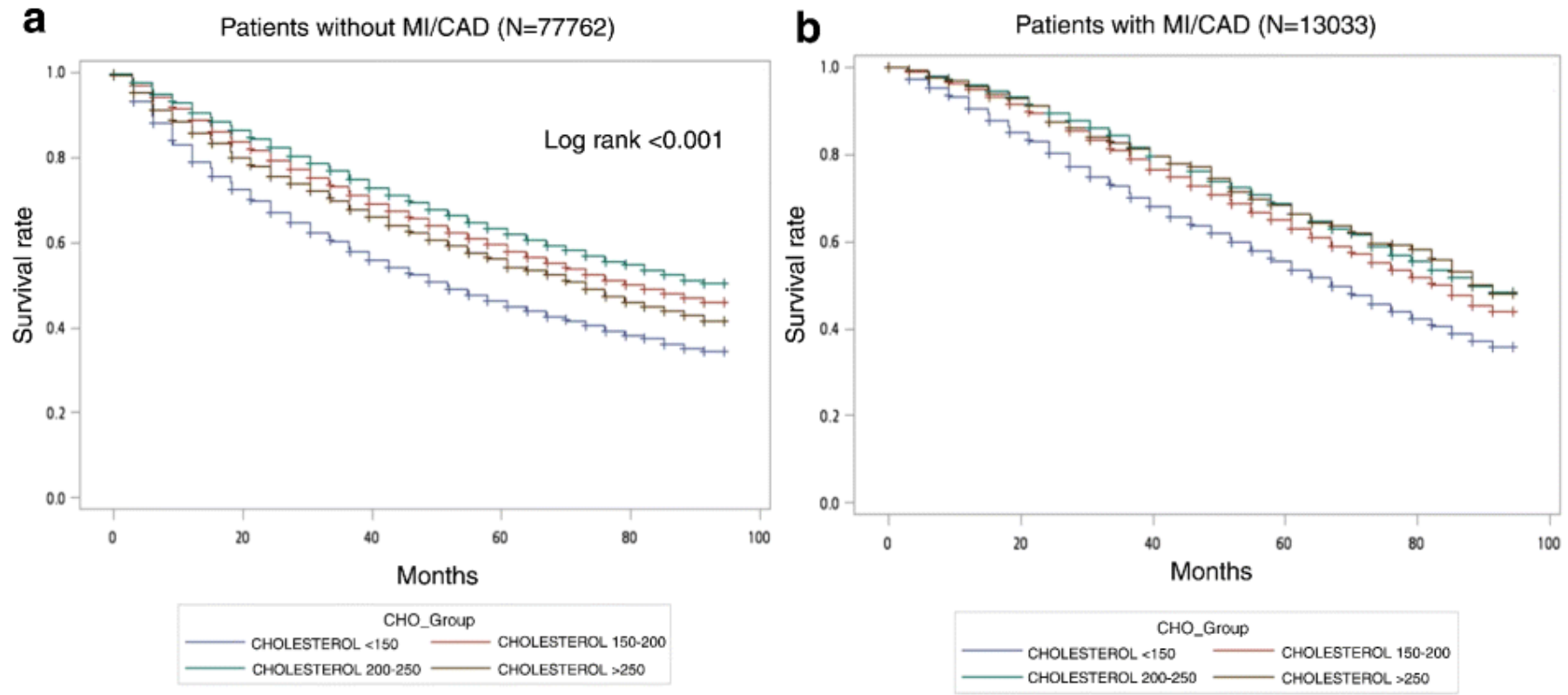
- **EGFR < 15 ml par minute (dialysé):** Nous **<u>suggérons</u>** que ces patients ne reçoivent systématiquement ni d'ACOs [Recommandation conditionnelle, preuves de faible qualité] ni d'ASA pour la prévention des ACVs dans le contexte de FA **[Recommandation conditionnelle, preuves de faible qualité].**

PHRC AVKDIAL

- Promoteur Pr T. Hannedouche CHU Strasbourg
- Hemodialysés en ACFA en prévention primaire
- 2 x 425 patients suivis 2 ans
- AVK vs

Statines et dialyse

Cholesterol et mortalité en HD



Les Statines chez l'hémodialysé

4D (2005)	Statine vs pcb	1255	Décès CV, IDM non fatal, AVC	0.92(0.77-1.10)
AURORA (2009)	Statine vs pcb	2776	Décès CV, IDM non fatal, AVC	0.96(0.84-1.11)
SHARP (2011)	Statine + ezetemibe vs pcb	3191	Décès CV, IDM , AVC isch ou revascularisation	0.95(0.78-1.15)

4D , Diabétiques Dialysés; Atorvastatine : 50% evts à 5 ans
Aurora, Rosuvastatine, 35% evts à 5 ans
SHARP; 3191 hémodialysés, Simvastatin + Ezetemibe; -5% NS

Recommandations KDIGO 2013

Chapter 2: Pharmacological cholesterol-lowering treatment in adults

2.1.1: In adults aged ≥50 years with eGFR <60 ml/min/1.73 m^2 but not treated with chronic dialysis or kidney transplantation (GFR categories G3a-G5), we recommend treatment with a statin or statin/ezetimibe combination. (*1A*)

2.1.2: In adults aged ≥50 years with CKD and eGFR ≥60 ml/min/1.73 m^2 (GFR categories G1-G2) we recommend treatment with a statin. (*1B*)

2.2: In adults aged 18–49 years with CKD but not treated with chronic dialysis or kidney transplantation, we suggest statin treatment in people with one or more of the following (*2A*):

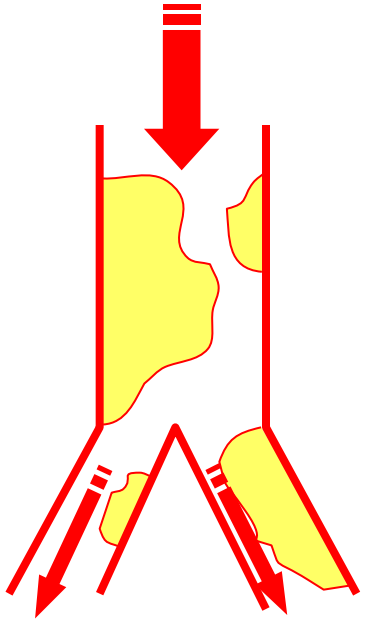
- known coronary disease (myocardial infarction or coronary revascularization)
- diabetes mellitus
- prior ischemic stroke
- estimated 10-year incidence of coronary death or non-fatal myocardial infarction >10%

2.3.1: In adults with dialysis-dependent CKD, we suggest that statins or statin/ezetimibe combination not be initiated. (*2A*)

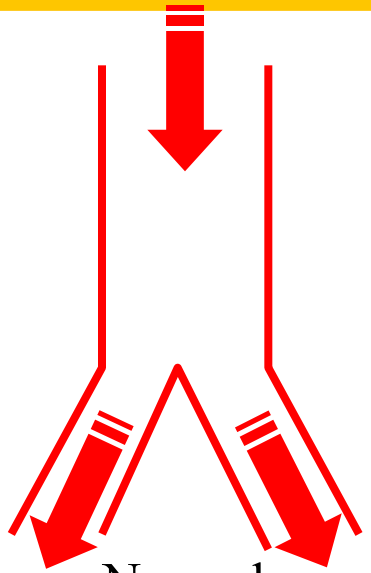
2.3.2: In patients already receiving statins or statin/ezetimibe combination at the time of dialysis initiation, we suggest that these agents be continued. (*2C*)

2.4: In adult kidney transplant recipients, we suggest treatment with a statin. (*2B*)

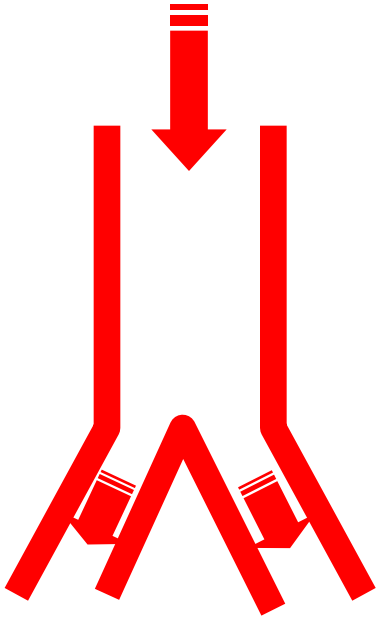
ATHEROSCLEROSE ET ARTERIOSCLEROSE



Athérosclerose



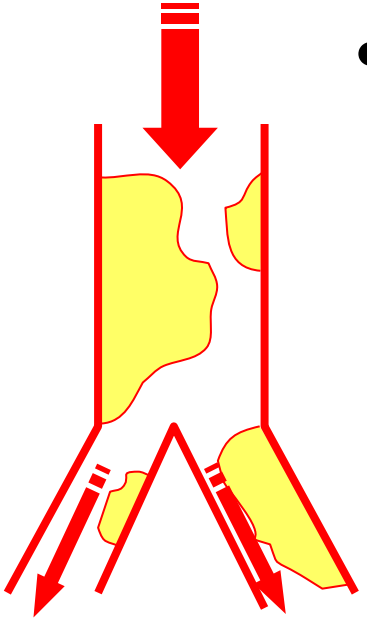
Normal

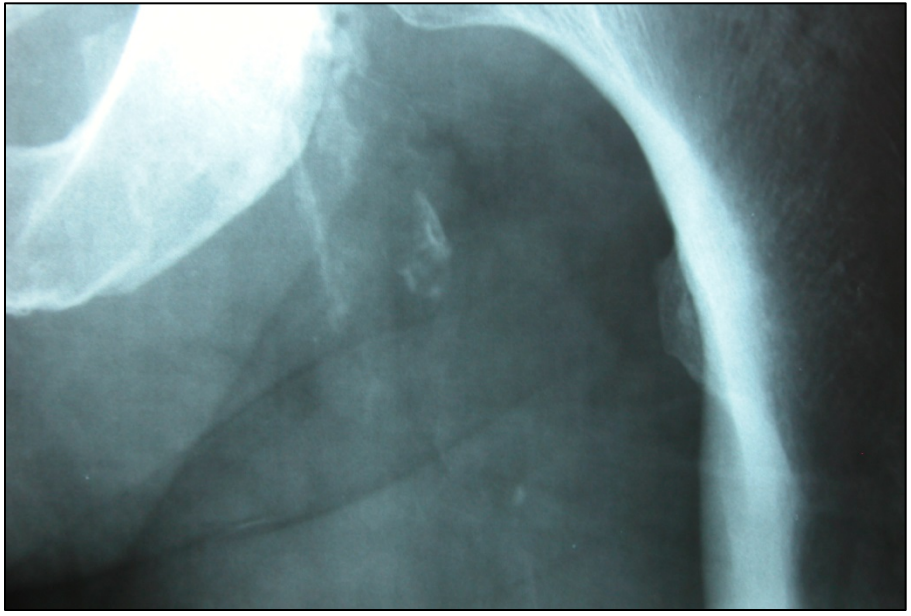


Artériosclerose

ATHEROSCLEROSE

- Formation plaques lipidiques
- Calcification de l'intima
- Calcifications discontinues, sténoses

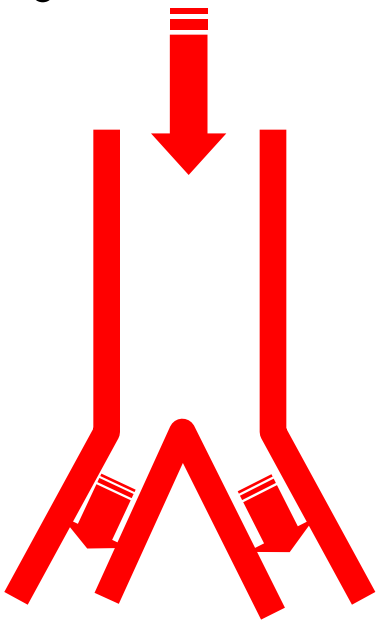




ARTERIOSCLEROSE
(Sclérose de Monckeberg, 1903)

- Rigidification et épaississement artères
- Perte élasticité et de la compliance
- Calcifications de la media

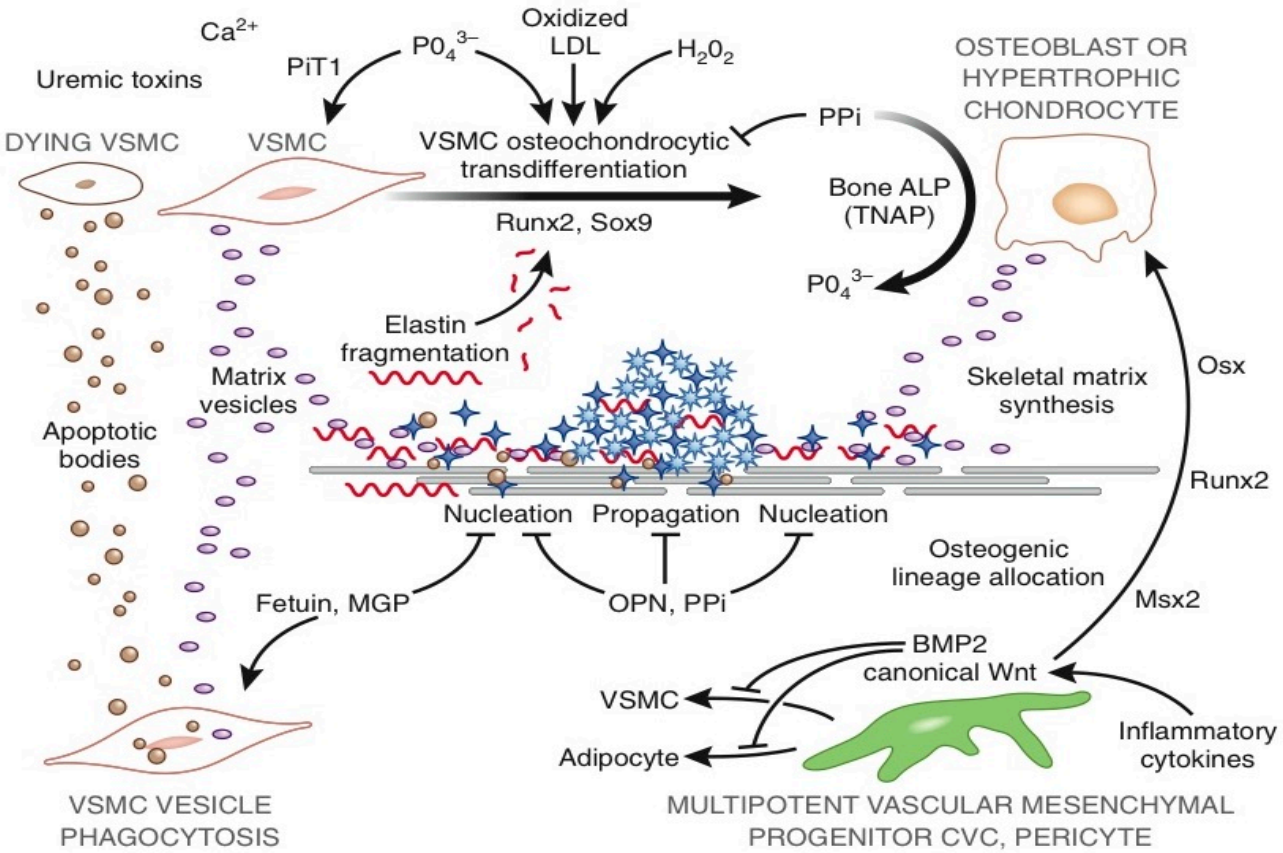
- Processus indépend
- Ossification



Facteurs de Risque

	Atherosclerose	Arteriosclerose
Dyslipidemie	Oui	Non
Age	Oui	Oui
HTA	Oui	Non
Male	Oui	Non
Tabac	Oui	Non
Inflammation	Oui (local)	Oui (systémique)
Diabetes	Oui	Oui
Néphropathie	Non	Oui
Ca	Non	Oui
Ph	Oui	Oui
Dialyse	Non	Oui

Physiopathologie



Messages pour la maison

- Oubliez tout ce que vous savez (et vous en saurez autant que les néphrologues)
- PA « normale » du dialysé n'est pas déterminée
- Pas de statines
- Pas d'AVK ?