



Association of atherosclerosis with presence and progression of osteoarthritis: the Rotterdam Study

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Introduction

- Facteurs de risque Arthrose
 - Age
 - Sexe féminin
 - Obésité
- Facteurs de risque supposés:
 - Diabète
 - Ménopause
 - Dyslipidémie
 - Sd métabolique
- Surmortalité CVx / Arthrose genou & hanche

Méthodes

- Cohorte Rotterdam
 - 1989
 - Age > 55 ans
 - 8000 individus
 - Suivi à 6.5 ans et 12 ans
- Athérosclérose avec Doppler Vx Cou
 - Sonde 7.5Mhz
 - Épaisseur intima média (IMT) : $K=0.74$
 - Plaque carotidienne

Méthodes

- Arthrose
 - Score de K/L ≥ 2
 - IPD: K=0.69
 - IPP: K=0.74
 - MCP: K=0.7
 - TPMCP: K=0.84
 - Genou: K=0.71
 - Hanche: K=0.74
 - Progression K/L +1
 - 2000 patients avec RX à 10 ans

Méthodes

- Cofacteurs:
 - Age
 - BMI
 - Diabète
 - Cholestérol
 - HTA
 - Fumeurs actifs

Résultats : Caractéristiques

Table 1 Baseline characteristics of the study population

Variable	All (n=5650)	Men (n=2372)	Women (n=3278)
Age, years	68.2±8.0	67.5±7.6	68.6±8.3
Male, %	42		
BMI, kg/m ²	26.3±3.6	25.7±3.0	26.8±4.0
Diabetes, %	10	10	10
Smoking, %	24	29	19
Hypertension, %	56	53	58
Total cholesterol/ HDL ratio	5.2±1.6	5.5±1.6	5.1±1.6
IMT, mm	1.0±0.2	1.1±0.2	1.0±0.2
Plaque present, %	59	66	55
Prevalence of osteoarthritis			
Knee, %	15	9	20
Hip, %	6	5	7
DIP, %	33	25	39
PIP, %	12	9	16
Metacarpophalangeal, %	5	4	7
CMC/TS, %	27	19	33

Résultats : Hanche et Genou

Table 2 Analysis of vascular variables in relation to the presence of knee osteoarthritis and hip osteoarthritis

		Crude	Age adjusted	Age + BMI adjusted	Fully adjusted\$
Men (n=2372)					
Knee osteoarthritis	IMT	2.5 (1.48 to 4.08)†	1.5 (0.82 to 2.64)	0.9 (0.62 to 1.18)	1.3 (0.68 to 2.36)
	Plaque	1.0 (0.76 to 1.42)	1.2 (0.64 to 2.17)	0.9 (0.61 to 1.18)	0.9 (0.60 to 1.19)
Hip osteoarthritis	IMT	1.5 (0.87 to 2.82)	1.0 (0.48 to 1.91)	0.9 (0.59 to 1.28)	1.0 (0.48 to 2.03)
	Plaque	1.1 (0.73 to 1.58)	0.9 (0.44 to 1.85)	0.9 (0.60 to 1.31)	0.9 (0.70 to 1.63)
Women (n=3278)					
Knee osteoarthritis	IMT	3.8 (2.54 to 5.52)‡	1.7 (1.10 to 2.52)*	1.7 (1.07 to 2.51)*	1.7 (1.10 to 2.73)*
	Plaque	1.2 (1.02 to 1.49)*	0.9 (0.77 to 1.15)	1.0 (0.79 to 1.19)	1.0 (0.81 to 1.24)
Hip osteoarthritis	IMT	2.6 (1.59 to 4.38)†	1.3 (0.69 to 2.37)	1.3 (0.68 to 2.41)	1.4 (0.71 to 2.60)
	Plaque	0.9 (0.73 to 1.26)	0.7 (0.54 to 0.99)*	0.7 (0.54 to 0.99)	0.8 (0.55 to 1.06)



IMT et Genou (1.7)

Résultats : Mains

Table 3 Analysis of vascular variables in relation to the presence of hand osteoarthritis

		Crude	Age adjusted	Age + BMI adjusted	Fully adjusted\$
Men (n=2410)					
DIP osteoarthritis	IMT	1.7 (1.12 to 2.44) *	1.1 (0.73 to 1.70)	1.0 (0.65 to 1.51)	1.1 (0.67 to 1.64)
	Plaque	1.0 (0.84 to 1.27)	0.9 (0.74 to 1.14)	0.9 (0.74 to 1.14)	1.0 (0.76 to 1.18)
PIP osteoarthritis	IMT	1.3 (0.78 to 2.23)	0.8 (0.45 to 1.52)	0.7 (0.39 to 1.35)	0.8 (0.40 to 1.40)
	Plaque	1.0 (0.74 to 1.35)	0.9 (0.66 to 1.23)	0.9 (0.65 to 1.22)	0.9 (0.66 to 1.24)
Metacarpophalangeal osteoarthritis	IMT	2.8 (1.61 to 5.00)‡	1.2 (0.56 to 2.47)	1.1 (0.51 to 2.25)	1.0 (0.46 to 2.06)
	Plaque	1.6 (1.00 to 2.65)*	1.3 (0.79 to 2.18)	1.3 (0.79 to 2.16)	1.3 (0.78 to 1.80)
CMC/TS osteoarthritis	IMT	1.7 (1.13 to 2.63)*	0.9 (0.56 to 2.47)	0.9 (0.53 to 1.38)	0.9 (0.56 to 1.54)
	Plaque	1.2 (0.98 to 1.56)	1.0 (0.80 to 1.29)	1.0 (0.79 to 1.27)	1.0 (0.78 to 1.28)
Women (n=3204)					
DIP osteoarthritis	IMT	2.4 (1.68 to 3.42)‡	1.3 (0.89 to 1.91)	1.3 (0.85 to 1.83)	1.4 (0.93 to 2.10)
	Plaque	1.5 (1.27 to 1.71)‡	1.3 (1.09 to 1.50)†	1.3 (1.10 to 1.52)†	1.4 (1.19 to 1.65)‡
PIP osteoarthritis	IMT	2.9 (1.92 to 4.27)‡	1.5 (0.97 to 2.36)	1.5 (0.92 to 2.28)	1.3 (0.81 to 2.22)
	Plaque	1.3 (1.06 to 1.59)*	1.1 (0.86 to 1.31)	1.1 (0.87 to 1.33)	1.1 (0.90 to 1.40)
Metacarpophalangeal osteoarthritis	IMT	3.9 (2.38 to 6.40)‡	1.6 (0.88 to 2.78)	1.5 (0.81 to 2.67)	1.6 (0.84 to 2.94)
	Plaque	2.0 (1.45 to 2.73)‡	1.5 (1.04 to 2.01)*	1.4 (1.04 to 2.00)*	1.5 (1.09 to 2.18)*
CMC/TS osteoarthritis	IMT	2.1 (1.45 to 3.00)‡	1.1 (0.72 to 1.63)	1.0 (0.86 to 1.22)	1.0 (0.68 to 1.59)
	Plaque	1.2 (1.04 to 1.43)*	1.1 (0.71 to 1.62)	1.0 (0.86 to 1.22)	1.0 (0.88 to 1.24)



Plaque et IPD (1.4)/MCP (1.5)

Résultats : progression arthrose

Table 4 Analysis of vascular variables in relation to the overall progression of osteoarthritis in women

		No of progressors (%)	Crude	Adjusted‡
Progression of knee osteoarthritis	IMT	228 (19)	2.4 (1.19 to 5.00)*	1.9 (0.83 to 4.39)
	Plaque	180 (18)	1.3 (0.98 to 1.66)	1.3 (0.97 to 1.67)
Progression of hip osteoarthritis	IMT	131 (8)	0.9 (0.36 to 1.99)	0.5 (0.17 to 1.17)
	Plaque	108 (8)	0.8 (0.59 to 1.11)	0.7 (0.53 to 1.02)
Progression of DIP osteoarthritis	IMT	530 (47)	1.0 (0.54 to 1.85)	1.3 (0.65 to 2.66)
	Plaque	445 (47)	1.0 (0.82 to 1.25)	1.1 (0.86 to 1.34)
Progression of PIP osteoarthritis	IMT	292 (26)	0.6 (0.27 to 1.24)	0.6 (0.26 to 1.34)
	Plaque	246 (26)	1.0 (0.75 to 1.21)	1.0 (0.77 to 1.29)
Progression of metacarpophalangeal osteoarthritis	IMT	202 (18)	3.2 (1.49 to 6.87)†	2.9 (1.18 to 6.93)*
	Plaque	158 (17)	1.0 (0.72 to 1.27)	0.9 (0.67 to 1.22)
Progression of CMC/TS osteoarthritis	IMT	352 (31)	0.9 (0.44 to 1.77)	0.6 (0.25 to 1.27)
	Plaque	285 (30)	1.0 (0.75 to 1.21)	0.9 (0.68 to 1.13)



IMT et MCP (2.9)

Discussion

- Association athérosclérose et arthroses des mains (MCP, IPD) et des genoux seulement chez la femme
- Pas de lien avec hanche ou TPMCP
- Lien sd métabolique/adipokines/arthrose IPD
- Taille +++ mais biais sélection