SUPPLEMENTAL MATERIAL

Supplemental Table 1: Biomarker assays

CATEGORY	BIOMARKER	ASSAY / METHOD
LIPIDS	HDL-C	Roche/Hitachi 704 direct enzymatic assay
	HDL-p	Nuclear magnetic resonance spectroscopy, LipoScience[1]
	Lp(a)	ELISA[2, 3]
	LDL-C	Calculated based on Friedwald equation
	LDL-p	Nuclear magnetic resonance spectroscopy, LipoScience[1]
	TG	Roche/Hitachi 704 enzymatic assay
	Total cholesterol	Roche/Hitachi 704 enzymatic assay
	Cholesterol efflux	BODIPY-cholesterol cell-based assay[4]
ADIPOKINES	Leptin	RIA, Linco Research[5]
	Adiponectin	ELISA, Millipore, Inc[6]
INFLAMMATION	D-dimer	Luminex immunoassay, Alere, Inc.
	hs-CRP	Roche/Hitachi 912 immunotubometric assay[7]
	OPG	ELISA, R&D Systems[8]
	LP-PLA2 mass	ELISA, diaDexus, Inc.[9]
	LP-PLA2 activity	Colorimetric activity method, GlaxoSmithKline,[9]
	IL-18	ELISA[10]
	MCP-1	Immunoassay, Biosite Inc.[11]*

	sRAGE	ELISA, Biosite, Inc.[12]*
	sTNFR	Luminex immunoassay, Alere, Inc.
ENDOTHELIAL FUNCTION / DYSFUNCTION	sESAM	Immunoassay, Biosite Inc.[13]*
	SDMA	LC-MS/MS[14, 15]
	ADMA	LC-MS/MS[16]
	Homoarginine	LC-MS/MS[16]
	sICAM	Luminex platform immunoassay, Biosite, Inc.[13]*
	sVCAM	Luminex platform immunoassay, Biosite, Inc.[13]*
MYOCYTE INJURY / STRESS	NT-proBNP	Elecsys proBNP immonoassay Roche Diagnostics[17]
	hs-cTnT	Elecsys-2010 Troponin T hs STAT Immunoassay, Roche Diagnostics[18]
	sST2	Luminex Immunoassay, Alere, Inc.[19]
	GDF-15	ELISA, Alere, Inc.[20]
KIDNEY FUNCTION	Cystatin C	Immunonephelometric assay, Dade Behring, Inc.[21]†

*Biosite is now Alere, Inc., San Diego, California

†Dade Behring is now Siemens Healthcare Diagnostics, Inc

Abbreviations: ELISA (enzyme-linked immunosorbent assay), LC-MS/MS (Liquid chromatography-tandem mass spectrometry), RIA (Radioimmunoassay)

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Supplemental Table 2: Biomarkers after full multivariable adjustment in pre-menopausal women compared with age-matched men and post-menopausal women compared with age-matched men

BIOMARKER	OVERALL β-COEFFICIENT (P-VALUE)	PRE-MENOPAUSAL WOMEN VS AGE-MATCHED MEN β-COEFFICIENT (P-VALUE)	POST-MENOPAUSAL WOMEN VS AGE-MATCHED MEN β-COEFFICIENT (P-VALUE)
LIPIDS			
HDL-C, mg/dL	0.06 (p=0.02)	0.02 (p=0.67)	0.12 (p=0.007)
HDL-p, μmol/L	0.05 (p=0.008)	0.008 (p=0.78)	0.18 (p=0.0004)
Lp(a), nmol/L	0.002 (p=0.98)	-0.04 (p=0.81)	-0.17 (p= 0.47)
LDL-C, mg/dL	-0.09 (p=0.01)	-0.20 (p=0.0003)	0.07 (p=0.29)
LDL-p, μmol/L	-0.03 (p=0.39)	-0.08 (p=0.05)	0.07 (p=0.27)
TG, mg/dL	0.03 (p=0.61)	0.04 (p=0.63)	0.13 (p=0.17)
Total cholesterol, mg/dL	-0.03 (p=0.16)	-0.09 (p=0.0009)	0.08 (p=0.03)

Cholesterol efflux, units	-0.02 (p=0.53)	-0.04 (p=0.37)	0.07 (p=0.24)
ADIPOKINES			
Leptin, ng/mL	0.84 (p<.0001)	0.86 (p=0.0003)	0.79 (p=0.0004)
Adiponectin, μg/mL	-0.10 (p=0.04)	-0.08 (p=0.27)	-0.13 (p=0.18)
INFLAMMATION			
D-dimer, μg/mL	0.42 (p<.0001)	0.60 (p=0.0003)	0.06 (p=0.69)
hs-CRP, mg/dL	-0.05 (p=0.64)	-0.17 (p=0.26)	0.22 (p=0.27)
OPG, pg/mL	0.09 (p=0.13)	0.07 (p=0.44)	0.09 (p=0.37)
LP-PLA2 mass, μg/L	-0.15 (p<.0001)	-0.14 (p=0.0003)	-0.15 (p=0.006)
LP-PLA2 activity, μmol/min/L	-0.11 (p<.0001)	-0.10 (p=0.004)	-0.12 (p=0.007)
IL-18, pg/mL	-0.15 (p=0.10)	-0.15 (p=0.29)	-0.03 (p=0.90)
MCP-1, pg/mL	-0.11 (p=0.03)	-0.18 (p=0.01)	-0.09 (p=0.37)
sRAGE, ng/mL	0.02	0.01	0.03

	(p=0.62)	(p=0.81)	(p=0.71)
sTNFR, pg/mL	-0.13 (p=0.05)	-0.03 (p=0.74)	-0.22 (p=0.07)
ENDOTHELIAL FUNCTION / DYSFUNCTION			
sESAM, ng/mL	-0.20 (p<.0001)	-0.18 (p=0.0005)	-0.27 (p=0.0004)
SDMA, μmol/L	-0.05 (p<.0001)	-0.05 (p=0.0003)	-0.05 (p=0.0004)
ADMA, μmol/L	-0.02 (p=0.001)	-0.04 (p=0.0003)	-0.005 (p=0.74)
Homoarginine, μmol/L	0.12 (p=0.0008)	0.09 (p=0.09)	0.17 (p=0.006)
sICAM, ng/mL	0.05 (p=0.41)	0.09 (p=0.20)	-0.04 (p=0.73)
sVCAM, ng/mL	-0.03 (p=0.60)	-0.12 (p=0.11)	0.008 (p=0.95)
MYOCYTE INJURY / STRESS			
NT-proBNP, pg/mL	0.51 (p<.0001)	0.65 (p=0.0003)	0.28 (p=0.18)
hs-cTnT, % ≥3 ng/L	-0.32 (p<.0001)	-0.22 (p=0.005)	-0.48 (p=0.0004)
sST2, μg/L	-0.05 (p=0.44)	0.03 (p=0.73)	-0.21 (p=0.04)

GDF-15, ng/L	-0.04 (p=0.43)	0.04 (p=0.58)	-0.23 (p=0.007)
KIDNEY DYSFUNCTION			
Cystatin C, mg/L	-0.17 (p<.0001)	-0.16 (p=0.0003)	-0.19 (p=0.0004)

Legend:

+β-coefficient: higher in women

-β-coefficient: lower in women

Significantly higher in women

Significantly lower in women

No significant difference between women and men

Variables adjusted for:

Model 1: age, race

Model 2: Model 1 + diabetes, hypertension, smoking, statin use, HOMA-IR, eGFR

Model 3: Model 2 + lean mass, fat mass, body surface area, visceral fat, subcutaneous fat, lower body fat

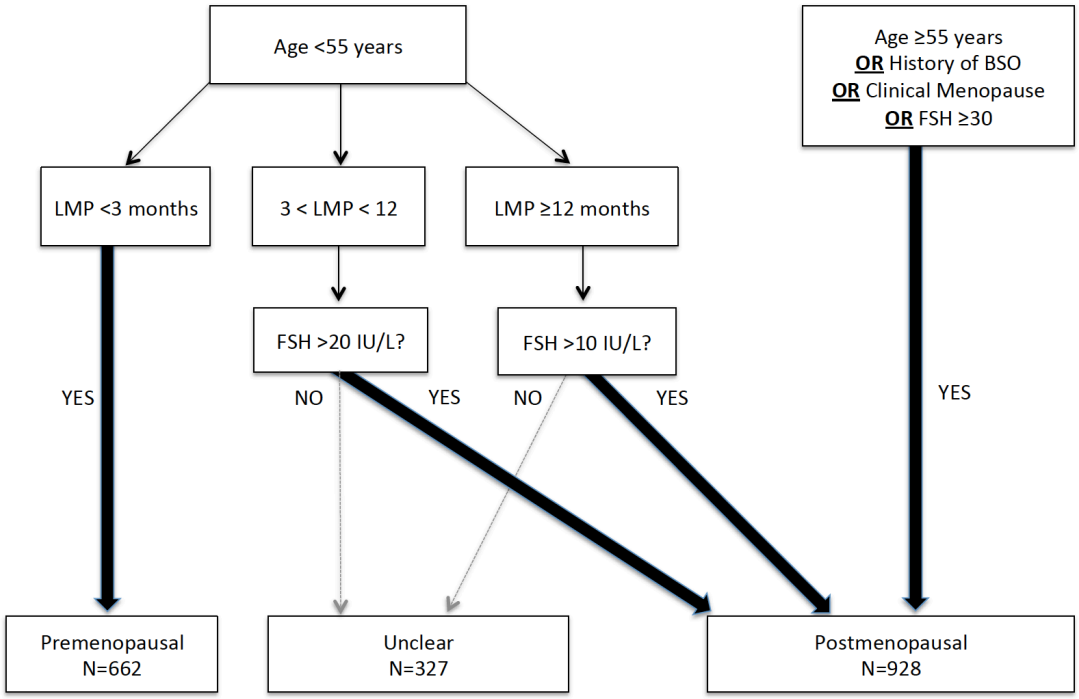
Model 4: Model 3 + left ventricular mass

Abbreviations: HDL-C, high density lipoprotein cholesterol; HDL-p, high density lipoprotein particle concentration; Lp(a), lipoprotein(a); LDL-C, low-density lipoprotein cholesterol; LDL-p, low-density lipoprotein particle concentration; TG, triglycerides; hs-CRP, high-sensitivity C-reactive protein; OPG, osteoprotegerin; LP-PLA2, lipoprotein phospholipase A2; IL-18,

interleukin-18; MCP-1, monocyte chemoattractant protein-1; sRAGE, soluble receptor for advanced glycation end products; sTNFR, soluble tumor necrosis factor receptor; sESAM, soluble endothelial cell selective adhesion molecule; SDMA, symmetrical dimethylarginine methylarginine; ADMA, asymmetrical dimethylarginine; sICAM, soluble intercellular adhesion molecule; sVCAM, soluble vascular cell adhesion molecule; NT-proBNP, N-terminal of the prohormone brain natriuretic peptide; hs-cTnT, high-sensitivity cardiac troponin T; sST2, soluble suppression of tumorigenicity 2; GDF-15, growth differentiation factor-15; HOMA-IR, homeostatic model assessment-insulin resistance; eGFR, estimated glomerular filtration rate

P-values adjusted for multiple testing using false discovery rate method

Supplemental Figure 1: Definition of Menopausal Status in the Dallas Heart Study



Legend: LMP, last menstrual period; BSO, bilateral salpingo-oophorectomy; FSH, follicle stimulating hormone
FSH not measured were considered "no"