

Supplementary Online Content

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eTable 1. Demographic and Clinical Variables Among Participants With Undetectable HIV Viral Load

eTable 2. Demographic and Clinical Variables Among Participants With Calcium Score Equal to Zero

eMethods. Smoking Supplementary Analysis

eTable 3. Demographic and Clinical Variables Among Participants Who Are Non-Smokers

eTable 4. Demographic and Clinical Variables Among Participants With Low Framingham Risk Score (0-10)

eTable 5. Demographic and Clinical Variables Among Participants With Low LDL (<100 mg/dL)

eTable 6. Demographic and Clinical Variables Among Participants Not Receiving Statin Therapy

eTable 7. Multivariate Regression Analysis Relating HIV Status to Aortic Target-to-Background Ratio (TBR), Controlling for Traditional Cardiovascular Risk Factors

This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Demographic and Clinical Variables Among Participants With Undetectable HIV Viral Load

	HIV (n=21)	Non-HIV FRS- Matched Controls (n=27)	P-value
Demographics			
Age, years	51.1 (48.6-53.6)	54.3 (51.1-57.5)	0.12
Gender, male, No. (%)	19 (90)	25 (93)	0.79
Framingham Risk Score	6.0 (4.0-7.9)	6.6 (4.9-8.2)	0.62
Current Smoker, No. (%)	3 (14)	2 (7)	0.44
Hypertension, No. (%)	2 (10)	4 (15)	0.58
Hyperlipidemia, No. (%)	11 (52)	14 (52)	0.97
Statin use, No. (%)	0 (0)	7 (26)	0.003
Clinical atherosclerotic disease, No. (%)	0 (0)	0 (0)	
Traditional CV risk factors			
LDL-Cholesterol, mg/dL	111 (100-123) n = 20	118 (106-131)	0.42
HDL-Cholesterol, mg/dL	49 (41-56)	53 (47-59)	0.33
Total Cholesterol, mg/dL	191 (177-205)	194 (179-208)	0.78
Triglycerides, mg/dL, median [IQR]	131 [105, 167]	96 [67, 166] n = 26	0.11
Systolic blood pressure, mm Hg	126 (119-132)	121 (114-127)	0.26
Diastolic blood pressure, mm Hg	78 (74-83)	76 (72-80)	0.48
Cardiac Imaging Parameters			
Target to background ratio (TBR)	2.24 (2.03-2.45)	1.89 (1.80-1.97)	< 0.001
Calcium Score, median [IQR]	0 [0.8, 70.5]	0 [0, 4.8] n = 24	0.08
HIV Disease Related Parameters			
Duration Since HIV Diagnosis, years	14.9 ± 5.8		
Currently on Antiretroviral Therapy, No. (%)	21 (100)		
Duration of Antiretroviral Therapy, years	11.5 ± 4.3 n = 17		
Current PI Treatment, No. (%)	7 (33)		
Current NRTI Treatment, No. (%)	21 (100)		
Current NNRTI Treatment, No. (%)	12 (57)		
CD4+ T-lymphocytes, cells/mm ³ (current)	695 ± 279 n = 20		
Nadir CD4+ T-lymphocytes, cells/mm ³ , median [IQR]	115 [50, 258] n = 20		
HIV RNA Level, copies/mL, median [IQR]	<48 [<48, <48]		
Undetectable HIV RNA (<48 copies/mL), No. (%)	21 (100)		

Data reported as mean (95% CI=confidence interval) or percentage, except for variables with non-normal distributions, which are reported as median [IQR=interquartile range]. Comparison between two groups by Student's T-test for normally distributed variables and by Wilcoxon Rank Sum test for non-normally distributed variables. Hyperlipidemia was defined based on NCEP ATP III criteria. PI, Protease Inhibitor; NRTI, Nucleoside/Nucleotide Reverse Transcriptase Inhibitors; NNRTI, Non-Nucleoside Reverse Transcriptase Inhibitors

eTable 2. Demographic and Clinical Variables Among Participants With Calcium Score Equal to Zero

	HIV (n=10)	Non-HIV FRS- Matched Controls (n=18)	<i>P</i> -value
Demographics			
Age, years	48.3 (44.8-51.8)	53.8 (49.4-58.2)	0.08
Gender, male, No. (%)	8 (80)	17 (94)	0.25
Framingham Risk Score	3.3 (1.7-4.9)	6.9 (4.6-9.2)	0.03
Current Smoker, No. (%)	1 (10)	2 (11)	0.93
Hypertension, No. (%)	0 (0)	3 (17)	0.09
Hyperlipidemia, No. (%)	5 (50)	10 (56)	0.78
Statin use, No. (%)	0 (0)	4 (22)	0.048
Clinical atherosclerotic disease, No. (%)	0 (0)	0 (0)	
Traditional CV risk factors			
LDL-Cholesterol, mg/dL	107 (93-121)	117 (100-135)	0.41
HDL-Cholesterol, mg/dL	48 (35-60)	53 (45-61)	0.41
Total Cholesterol, mg/dL	183 (167-200)	195 (176-213)	0.38
Triglycerides, mg/dL, median [IQR]	126 [95, 171]	95 [67, 161] n = 17	0.33
Systolic blood pressure, mm Hg	117 (110-123)	120 (111-128)	0.62
Diastolic blood pressure, mm Hg	74 (69-79)	75 (70-80)	0.76
Cardiac Imaging Parameters			
Target to background ratio (TBR)	2.30 (1.92-2.69)	1.91 (1.81-2.01)	0.009
Calcium Score, median [IQR]	0 [0, 0]	0 [0, 0]	1.00
HIV Disease Related Parameters			
Duration Since HIV Diagnosis, years	12.9 ± 5.0		
Currently on Antiretroviral Therapy, No. (%)	10 (100)		
Duration of Antiretroviral Therapy, years	9.7 ± 3.9 n = 9		
Current PI Treatment, No. (%)	3 (30)		
Current NRTI Treatment, No. (%)	10 (100)		
Current NNRTI Treatment, No. (%)	6 (60)		
CD4+ T-lymphocytes, cells/mm ³ (current)	808 ± 244		
Nadir CD4+ T-lymphocytes, cells/mm ³ , median [IQR]	115 [50, 250]		
HIV RNA Level, copies/mL, median [IQR]	<48 [<48, <48]		
Undetectable HIV RNA (<48 copies/mL), No. (%)	10 (100)		

Data reported as mean (95% CI=confidence interval) or percentage, except for variables with non-normal distributions, which are reported as median [IQR=interquartile range]. Comparison between two groups by Student's T-test for normally distributed variables and by Wilcoxon Rank Sum test for non-normally distributed variables. Hyperlipidemia was defined based on NCEP ATP III criteria. PI, Protease Inhibitor; NRTI, Nucleoside/Nucleotide Reverse Transcriptase Inhibitors; NNRTI, Non-Nucleoside Reverse Transcriptase Inhibitors

eMethods. Smoking Supplementary Analysis

Smoking rates were not significantly different between HIV and FRS-matched control subjects ($P=0.12$), without differences in TBR by smoking status in these groups. In an analysis considering only the HIV and FRS-matched control group, aortic TBR remained significantly higher in the HIV group vs. the FRS-matched control group, adjusting for smoking ($P<0.001$), without a significant effect of smoking in the analysis ($P=0.79$ for smoking effect). In a combined analysis considering all three groups, a significant effect of group remained ($P<0.001$) without a significant effect of smoking ($P=0.25$ for smoking effect).

eTable 3. Demographic and Clinical Variables Among Participants Who Are Non-Smokers

	HIV (n=21)	Non-HIV FRS- Matched Controls (n=25)	P-value
Demographics			
Age, years	51.6 (49.1-54.0)	54.2 (50.8.-57.7)	0.21
Gender, male, No. (%)	20 (95)	23 (92)	0.65
Framingham Risk Score	5.7 (4.0-7.3)	5.9 (4.4-7.4)	0.81
Current Smoker, No. (%)	0 (0)	0 (0)	
Hypertension, No. (%)	4 (19)	4 (16)	0.79
Hyperlipidemia, No. (%)	12 (57)	12 (48)	0.54
Statin use, No. (%)	0 (0)	7 (28)	0.002
Clinical atherosclerotic disease, No. (%)	0 (0)	0 (0)	
Traditional CV risk factors			
LDL-Cholesterol, mg/dL	114 (102-126) n = 20	116 (103-128)	0.81
HDL-Cholesterol, mg/dL	47 (40-54)	54 (48-60)	0.10
Total Cholesterol, mg/dL	192 (178-205)	192 (177-207)	0.96
Triglycerides, mg/dL, median [IQR]	131 [102, 178]	96 [66, 169] n = 24	0.11
Systolic blood pressure, mm Hg	125 (118-131)	120 (114-127)	0.35
Diastolic blood pressure, mm Hg	79 (74-83)	76 (72-80)	0.32
Cardiac Imaging Parameters			
Target to background ratio (TBR)	2.23 (2.04, 2.43)	1.90 (1.81, 1.99)	0.001
Calcium Score, median [IQR]	37.4 [0, 143.8]	0 [0, 20.3] n = 22	0.06
HIV Disease Related Parameters			
Duration Since HIV Diagnosis, years	14.9 ± 5.3		
Currently on Antiretroviral Therapy, No. (%)	21 (100)		
Duration of Antiretroviral Therapy, years	12.0 ± 3.9 n = 17		
Current PI Treatment, No. (%)	8 (38)		
Current NRTI Treatment, No. (%)	20 (95)		
Current NNRTI Treatment, No. (%)	11 (52)		
CD4+ T-lymphocytes, cells/mm ³ (current)	616 ± 283		
Nadir CD4+ T-lymphocytes, cells/mm ³ , median [IQR]	89 [50, 243] n = 20		
HIV RNA Level, copies/mL, median [IQR]	<48 [<48, <48]		
Undetectable HIV RNA (<48 copies/mL), No. (%)	18 (86)		

Data reported as mean (95% CI=confidence interval) or percentage, except for variables with non-normal distributions, which are reported as median [IQR=interquartile range]. Comparison between two groups by Student's T-test for normally distributed variables and by Wilcoxon Rank Sum test for non-normally distributed variables. Hyperlipidemia was defined based on NCEP ATP III criteria. PI, Protease Inhibitor; NRTI, Nucleoside/Nucleotide Reverse Transcriptase Inhibitors; NNRTI, Non-Nucleoside Reverse Transcriptase Inhibitors

eTable 4. Demographic and Clinical Variables Among Participants With Low Framingham Risk Score (0-10)

	HIV (n=21)	Non-HIV FRS-Matched Controls (n=23)	P-value
Demographics			
Age, years	50.1 (48.0-52.3)	53.5 (49.9-57.1)	0.11
Gender, male, No. (%)	19 (90)	21 (91)	0.92
Framingham Risk Score	4.6 (3.5-5.8)	5.3 (4.0-6.5)	0.44
Current Smoker, No. (%)	3 (14)	0 (0)	0.03
Hypertension, No. (%)	3 (14)	3 (13)	0.90
Hyperlipidemia, No. (%)	11 (52)	11 (48)	0.76
Statin use, No. (%)	0 (0)	6 (26)	0.003
Traditional CV risk factors			
LDL-Cholesterol, mg/dL	113 (102-125)	112 (100-124)	0.89
HDL-Cholesterol, mg/dL	49 (41-56)	54 (47-61)	0.25
Total Cholesterol, mg/dL	190 (178-203)	187 (173-201)	0.72
Triglycerides, mg/dL, median [IQR]	120 [102, 178]	95 [65, 165]	0.08
Systolic blood pressure, mm Hg	122 (116-128)	119 (112-126)	0.51
Diastolic blood pressure, mm Hg	78 (74-83)	75 (71-80)	0.29
Cardiac Imaging Parameters			
Target to background ratio (TBR)	2.24 (2.05-2.43)	1.92 (1.83-2.00)	0.002
Calcium Score, median [IQR]	0.8 [0, 51.0]	0 [0, 4.8] n = 20	0.11
HIV Disease Related Parameters			
Duration Since HIV Diagnosis, years	13.9 ± 4.6		
Currently on Antiretroviral Therapy, No. (%)	21 (100)		
Duration of Antiretroviral Therapy, years	11.9 ± 4.3 n = 19		
Current PI Treatment, No. (%)	8 (38)		
Current NRTI Treatment, No. (%)	20 (95)		
Current NNRTI Treatment, No. (%)	12 (57)		
CD4+ T-lymphocytes, cells/mm ³ (current)	659 ± 286		
Nadir CD4+ T-lymphocytes, cells/mm ³ , median [IQR]	89 [50, 243] n = 20		
HIV RNA Level, copies/mL, median [IQR]	<48 [<48, 53]		
Undetectable HIV RNA (<48 copies/mL), No. (%)	16 (76)		

Data reported as mean (95% CI=confidence interval) or percentage, except for variables with non-normal distributions, which are reported as median [IQR=interquartile range]. Comparison between two groups by Student's T-test for normally distributed variables and by Wilcoxon Rank Sum test for non-normally distributed variables. Hyperlipidemia was defined based on NCEP ATP III criteria. PI, Protease Inhibitor; NRTI, Nucleoside/Nucleotide Reverse Transcriptase Inhibitors; NNRTI, Non-Nucleoside Reverse Transcriptase Inhibitors

eTable 5. Demographic and Clinical Variables Among Participants With Low LDL (<100 mg/dL)

	HIV (n=8)	Non-HIV FRS-Matched Controls (n=6)	P-value
Demographics			
Age, years	52.8 (48.2-57.3)	57.7 (50.3-65.0)	0.16
Gender, male, No. (%)	7 (88)	5 (83)	0.83
Framingham Risk Score	5.1 (2.1-8.1)	6.3 (3.1-9.6)	0.52
Current Smoker, No. (%)	1 (13)	0 (0)	0.28
Hypertension, No. (%)	1 (13)	1 (17)	0.83
Hyperlipidemia, No. (%)	5 (63)	2 (33)	0.28
Statin use, No. (%)	0 (0)	1 (17)	0.18
Traditional CV risk factors			
LDL-Cholesterol, mg/dL	85 (77-94)	78 (54-102)	0.43
HDL-Cholesterol, mg/dL	44 (31-57)	53 (37-69)	0.32
Total Cholesterol, mg/dL	161 (141-180)	151 (131-171)	0.44
Triglycerides, mg/dL, median [IQR]	137 [104, 202]	67 [63, 147]	0.11
Systolic blood pressure, mm Hg	126 (115-136)	119 (102-137)	0.43
Diastolic blood pressure, mm Hg	80 (72-88)	74 (65-82)	0.22
Cardiac Imaging Parameters			
Target to background ratio (TBR)	2.30 (2.09-2.52)	1.91 (1.65-2.17)	0.01
Calcium Score, median [IQR]	0.4 [0, 33.3]	0 [0, 76.3] n = 5	0.56
HIV Disease Related Parameters			
Duration Since HIV Diagnosis, years	14.4 ± 4.7		
Currently on Antiretroviral Therapy, No. (%)	8 (100)		
Duration of Antiretroviral Therapy, years	9.9 ± 2.7 n = 5		
Current PI Treatment, No. (%)	5 (63)		
Current NRTI Treatment, No. (%)	8 (100)		
Current NNRTI Treatment, No. (%)	2 (25)		
CD4+ T-lymphocytes, cells/mm ³ (current)	650 ± 203 n = 7		
Nadir CD4+ T-lymphocytes, cells/mm ³ , median [IQR]	90 [46, 253] n = 6		
HIV RNA Level, copies/mL, median [IQR]	<48 [<48, <48] n = 7		
Undetectable HIV (RNA <48 copies/mL), No. (%)	7 (100) n = 7		

Data reported as mean (95% CI=confidence interval) or percentage, except for variables with non-normal distributions, which are reported as median [IQR=interquartile range]. Comparison between two groups by Student's T-test for normally distributed variables and by Wilcoxon Rank Sum test for non-normally distributed variables. Hyperlipidemia was defined based on NCEP ATP III criteria. PI, Protease Inhibitor; NRTI, Nucleoside/Nucleotide Reverse Transcriptase Inhibitors; NNRTI, Non-Nucleoside Reverse Transcriptase Inhibitors

eTable 6. Demographic and Clinical Variables Among Participants Not Receiving Statin Therapy

	HIV (n=27)	Non-HIV FRS-Matched Controls (n=20)	<i>P</i> -value
Demographics			
Age, years	51.6 (49.5-53.6)	52.4 (48.7-56.1)	0.66
Gender, male, No. (%)	25 (93)	18 (90)	0.75
Framingham Risk Score	6.4 (4.8-8.0)	5.8 (3.9-7.7)	0.64
Current Smoker, No. (%)	6 (22)	2 (10)	0.26
Hypertension, No. (%)	5 (19)	3 (15)	0.75
Hyperlipidemia, No. (%)	14 (52)	7 (35)	0.25
Traditional CV risk factors			
LDL-Cholesterol, mg/dL	113 (103-123) n = 26	114 (100-129)	0.87
HDL-Cholesterol, mg/dL	48 (42-55)	54 (46-61)	0.28
Total Cholesterol, mg/dL	192 (179-204)	192 (176-208)	0.98
Triglycerides, mg/dL, median [IQR]	121 [100, 173]	96 [66, 163]	0.11
Systolic blood pressure, mm Hg	126 (120-131)	119 (111-128)	0.17
Diastolic blood pressure, mm Hg	79 (75-83)	75 (70-80)	0.20
Cardiac Imaging Parameters			
Target to background ratio (TBR)	2.23 (2.07-2.40)	1.88 (1.79-1.97)	0.001
Calcium Score, median [IQR]	24.4 [0, 92.6]	0 [0, 0] n = 17	0.01
HIV Disease Related Parameters			
Duration Since HIV Diagnosis, years	15.5 ± 5.7		
Currently on Antiretroviral Therapy, No. (%)	27 (100)		
Duration of Antiretroviral Therapy, years	12.3 ± 4.3 n = 22		
Current PI Treatment, No. (%)	11 (41)		
Current NRTI Treatment, No. (%)	26 (96)		
Current NNRTI Treatment, No. (%)	14 (52)		
CD4+ T-lymphocytes, cells/mm ³ (current)	641 ± 288 n = 26		
Nadir CD4+ T-lymphocytes, cells/mm ³ , median [IQR]	99 [50, 250] n = 25		
HIV RNA Level, copies/mL, median [IQR]	<48 [<48, <48] n = 26		
Undetectable HIV RNA (<48 copies/mL), No. (%)	21 (81) n = 26		

Data reported as mean (95% CI=confidence interval) or percentage, except for variables with non-normal distributions, which are reported as median [IQR=interquartile range]. Comparison between two groups by Student's T-test for normally distributed variables and by Wilcoxon Rank Sum test for non-normally distributed variables. Hyperlipidemia was defined based on NCEP ATP III criteria. PI, Protease Inhibitor; NRTI, Nucleoside/Nucleotide Reverse Transcriptase Inhibitors; NNRTI, Non-Nucleoside Reverse Transcriptase Inhibitors

eTable 7. Multivariate Regression Analysis Relating HIV Status to Aortic Target to Background Ratio (TBR), Controlling for Traditional Cardiovascular Risk Factors

Parameter	β	<i>P</i> -value
HIV versus Non-HIV FRS-Matched Control Subjects	0.19	0.002
Framingham Risk Score	-0.02	0.30
Statin Use	-0.04	0.64
Calcium Score	-0.0004	0.37
Current Smoker	-0.01	0.87
LDL-Cholesterol, mg/dL	0.0005	0.77

Overall model $r^2 = 0.27$, $P = 0.03$