

**Title: In people living with HIV on stable ART, maximal carotid plaque thickness is associated with increased inflammatory, monocyte and endothelial biomarkers MCP-1, TNFa and sVCAM1.**

PRESENTER: **Makoa Mau**

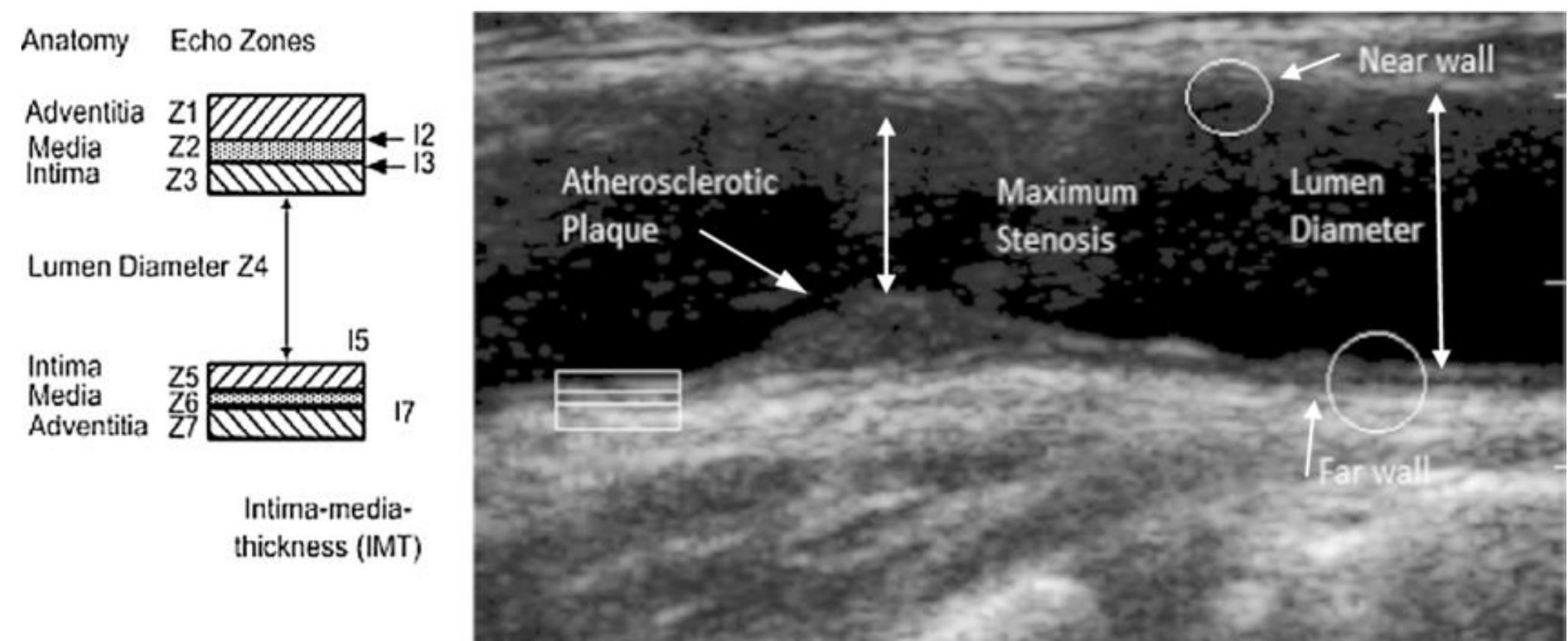
Mentor: Dominic Chow, MD, PhD, MPH

**INTRODUCTION**

- HIV+ individuals are living longer as a result of virally suppressive combination antiretroviral therapy (ART), making cardiovascular disease (CVD) an important cause of morbidity and mortality in this population
- Maximal carotid plaque thickness (MCPT) measures the largest plaque of the common carotid artery

**METHODS**

- 1.Hawaii Aging With HIV-Cardiovascular Cohort (n=125).
- 2.MCPT assessments, flow cytometric analysis, and Milliplex Human Cardiovascular Disease Panels.
- 3.Stratified statistical analyses by HIV and MCPT (+/-) status using spearman correlation, multivariable linear regression, Kruskal Wallis test and Mann Whitney U test.



Loizou, Christos. (2014). A review of ultrasound common carotid artery image and video segmentation techniques. Medical & biological engineering & computing. 52. 1073-1093. 10.1007/s11517-014-1203-5.

**RESULTS**

Spearman Correlation Between Log Maximal Carotid Plaque Thickness (MCPT) and Predictors of CVD in HIV+ Participants

	HIV+ MCPT	
	rho	P-value
<b>Predictors of CVD</b>		
Monocyte-Chemoattractant Protein 1 (MCP1)	.487	.016
Tumor Necrosis Factor Alpha (TNF-a)	.474	.019
Soluble Vascular Adhesion Molecule-1 (sVCAM1)	.472	.020
IL6	.455	.025
ApoB6	-.473	.019
Non-classical Monocytes	.409	.073
Right Bifurcation Intima Media Thickness	-.060	.777
Common Carotid Artery Intima Media Thickness	.009	.965

\*more parameters were run and can be seen by scanning QR code

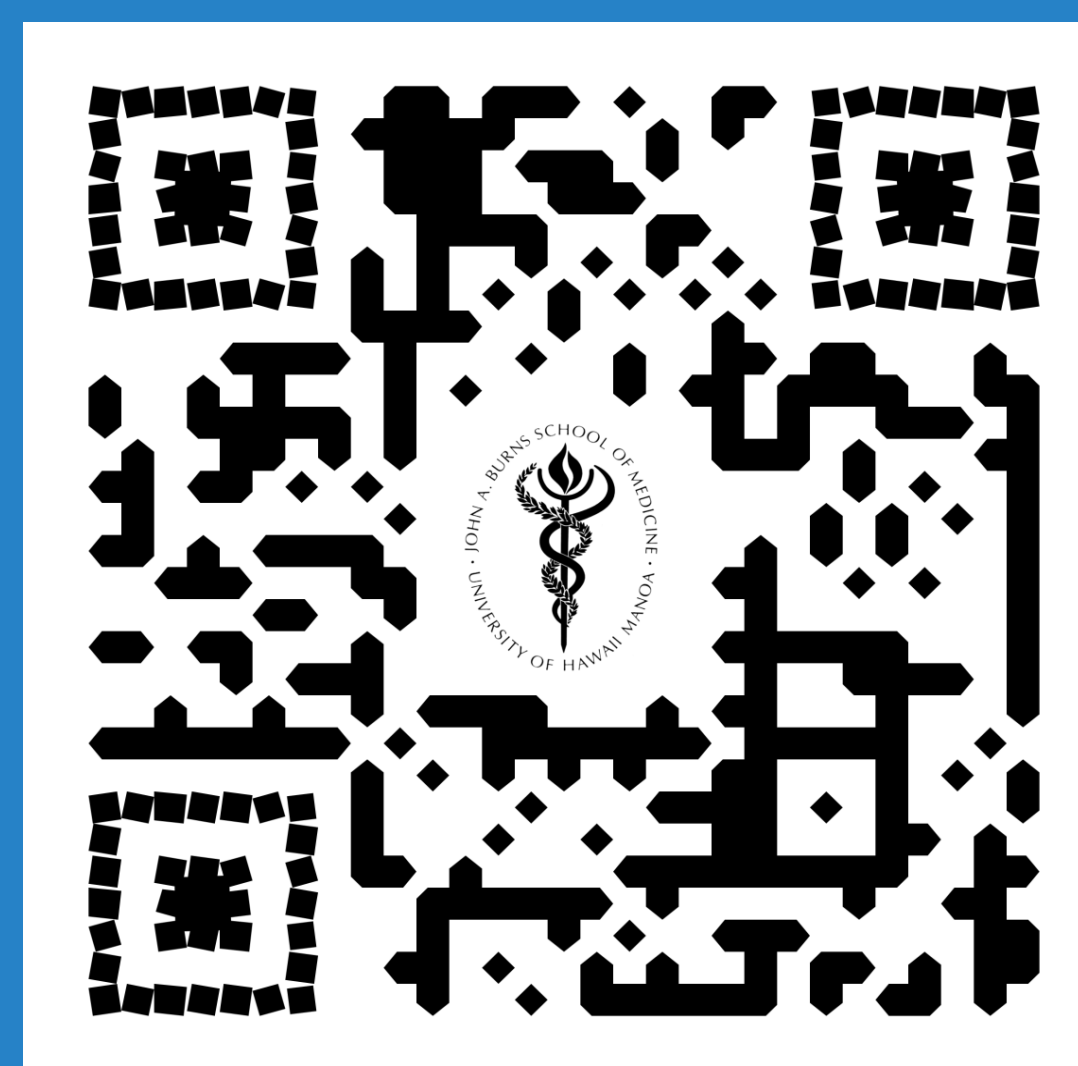
Multivariable Linear Regression With and Without Adjustment for Age

Parameter	HIV+ MCPT Baseline			HIV+ MCPT Baseline, Adjusted with Age		
	Unstandardized B	Standardized B	P value	Unstandardized B	Standardized B	P value
MCP1	.444	.477	.018	.455	.488	.016
TNFa	.220	.435	.033	.224	.444	.030
sVCAM1	.718	.521	.009	.719	.521	.009
Non-classical Monocytes	.236	.451	.046	.239	.351	.137
ApoB6	-.145	.0315	.134	-.129	-.280	.211
IL6	.052	.156	.468	.051	.150	.485



# A better predictor of cardiovascular events, maximal carotid plaque thickness, was studied for the first time in an HIV cohort.

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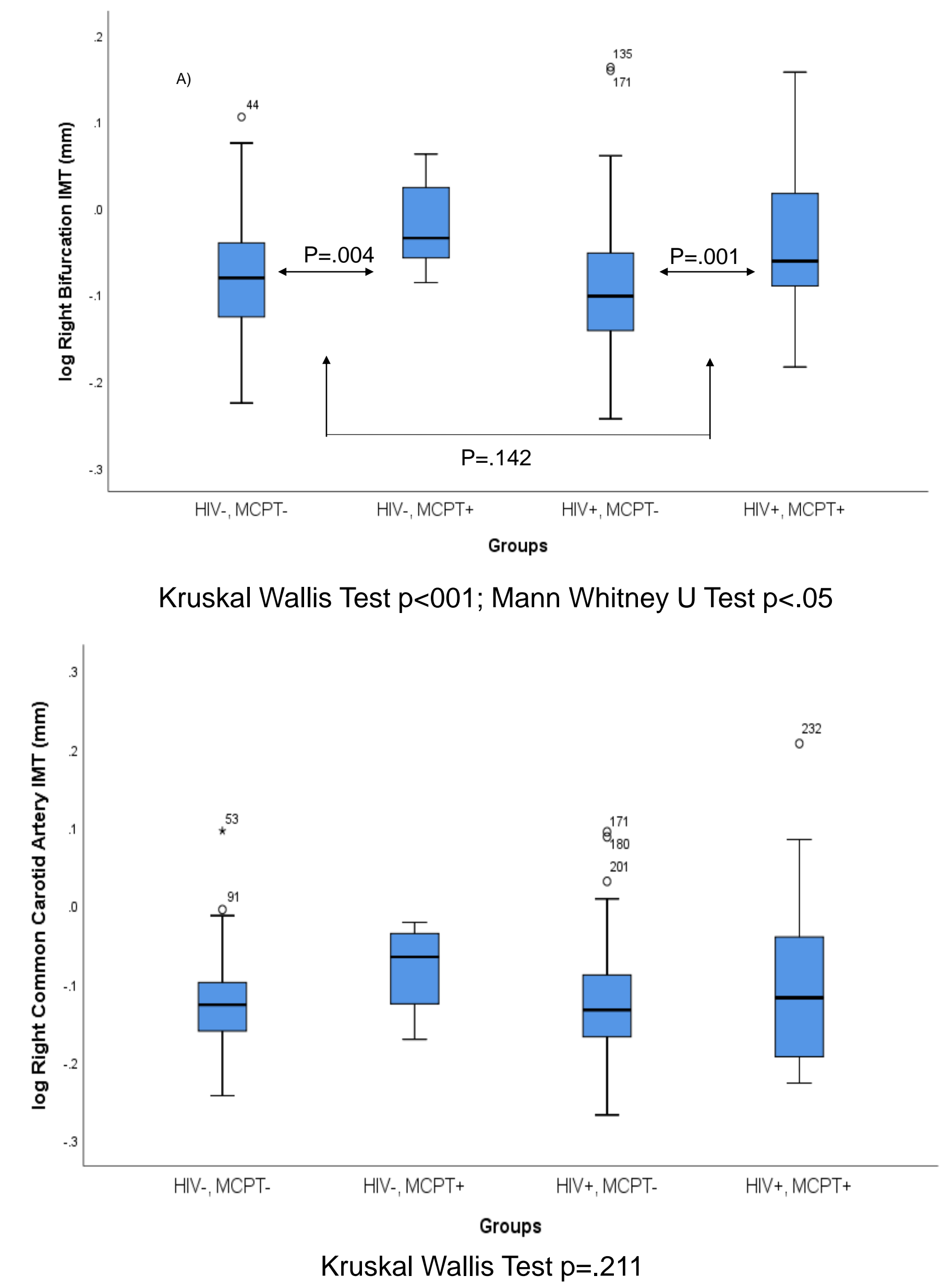


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**SUPPLEMENTAL INFORMATION**  
 Boxplots of RBIF and RCCA CIMT in stratified groups



Longitudinal Data of 15 HIV+ Participants with a Change in MCPT

	No	Base MCPT (mm)	Year 3 MCPT (mm)	Base Tobacco Use	Illicit Drug Use	ΔART Meds	ΔTotal Chol mg/dL	ΔLDL mg/dL	ΔHDL mg/dL	Baseline CVD Medication
MCPT increasing	1	0	2.365	No	None	No	-11	-2	18	Diltiazem, Fenofibrate, Pravastatin
	2	0	2.19	No	None	No	-7	8	17	Lisinopril
	3	2.10	3.04	No	None	No	-9	-11	21	Avapro
	4	2.47	2.52	Yes	+Crystal Meth	No	-31	-64	34	None
	5	3.47	3.51	No	-Alcohol, +Ziagen, +Epirvir, +Sustiva	No	32	-1	31	Pravastatin
	6	2.64	2.67	No	None	No	-3	13	5	Lisinopril, Hytrin
MCPT decreasing	7	4.61	4.61	No	-Alcohol, -Nitrates	No	0	9	3	Coreg, Lipid, Lotensin, Tricor, Nifedipine
	8	6.73	6.72	No	None	No	24	3	-1	Metoprolol, Tricor, Atorvastatin
	9	2.01	1.95	Yes	None	No	21	22	2	None
	10	2.89	2.81	No	-Nitrates	No	-26	-5	-9	Toprol, Pravastatin
	11	2.48	2.25	No	None	No	-11	-110	3	Lisinopril, Atorvastatin
	12	3.04	2.47	No	-Alcohol, -Marijuana	-Antipla	29	37	6	None
	13	2.17	0	No	-Alcohol, -Marijuana	No	78	65	11	Atorvastatin
	14	3.07	0	Yes	-Alcohol, -Marijuana	No	-4	17	7	Diovan
	15	3.39	0	No	+Marijuana	No	26	10	7	None

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