18 IMPROVEMENT IN PSORIASIS SKIN DISEASE SEVERITY IS ASSOCIATED WITH REDUCTION OF CORONARY PLAQUE BURDEN

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Purpose of Study Psoriasis (PSO), a chronic inflammatory disease associated with increased cardiovascular (CV) risk, provides a clinical human model to study inflammatory atherogenesis. While PSO severity is associated with both in vivo vascular disease and future CV risk, the longitudinal impact of PSO severity on coronary disease progression is unknown. We hypothesized that an improvement in PSO severity may lead to a reduction in coronary plaque burden by coronary CT angiography (CCTA).

Methods Used Consecutively recruited PSO patients (N=50) underwent CCTA (320 detector row, Toshiba) and cardiometabolic profiling at baseline and 1-year follow-up. Total (TB) and non-calcified (NCB) coronary plaque burden were quantified using QAngio (Medis, Netherlands). PSO severity was measured as the psoriasis area severity index (PASI). The longitudinal change in coronary plaque burden was analyzed with unadjusted and adjusted regression.

Summary of Results The cohort had a low Framingham Risk Score and mild to moderate PSO. Patients whose PSO

severity improved (Δ PASI -27%; $p<0.001$) (N=33) had significant improvement in TB ($\beta=0.40$, $p=0.003$) and NCB ($\beta=0.49$, $p<0.001$) (table 1), beyond adjustment for traditional CV risk factors, BMI, statin use, & systemic/biologic PSO therapy.

Conclusions Improvement in PSO severity was associated with improvement in coronary plaque burden by CCTA. Our study suggests that a reduction in skin inflammation may reduce the progression of early, non-calcified coronary plaque. Larger studies are needed to confirm these findings.

Table 1: Demographic and Clinical Characteristics of the Study Group, stratified by Improvement in Psoriasis Area Severity Index (PASI) Score

Parameter	No Improvement in PASI (N=17)			Improvement in PASI (N=33)		
	Baseline	1-year	P*	Baseline	1-year	P*
Demographic and Clinical Characteristics						
Age, years	52.2±13.6	53.3±13.4	-	52.2±10.9	53.3±10.8	-
Males, N (%)	11 (65%)	-	-	19 (58%)	-	-
Hypertension, N (%)	6 (35%)	5 (29%)	<0.001	11 (33%)	8 (24%)	<0.001
Type-2 Diabetes, N (%)	2 (12%)	1 (6%)	<0.001	5 (15%)	4 (12%)	<0.001
Hyperlipidemia, N (%)	13 (76.5%)	10 (59%)	<0.01	21 (64%)	21 (64%)	1
Current Smoker, N (%)	2 (12%)	3 (19%)	0.25	3 (9%)	1 (3%)	0.03
Body Mass Index, kg/m ²	29.7±5.7	30.3±5.0	0.05	30.1±5.1	29.8±5.0	0.02
Clinical Lab Values						
Systolic Blood Pressure, mm Hg	124.4±11.6	115.5±13.6	<0.0001	125.3±12.2	116.5±13.7	<0.0001
Total Cholesterol, mg/dL	178.2±33.6	166.7±35.7	<0.005	178.2±33.6	180.7±39.1	0.28
HDL Cholesterol, mg/dL	49.9±15.2	56.1±22	0.001	53.7±15.7	57±20.7	<0.005
Framingham Risk Score (Median [IQR])	4 (2-7)	5 (1-9)	0.33	4 (3-7)	2 (1-7)	0.002
Psoriasis Details						
PASI Score	3.2(1.4-5.1)	4.9 (3.1-6.0)	<0.0001	5.6 (4-12.3)	3.1 (1.9-4.8)	<0.0001
Systemic and/or Biological Therapy, N (%)	8 (47.1%)	10 (58.8%)	0.03	15 (45.5%)	21 (63.6%)	<0.001
Liquid Treatment, N (%)	9 (52.9%)	10 (58.2%)	0.25	13 (39.4%)	14 (42.42%)	0.32
Coronary Plaque Burden						
Total Burden (x100), mm ³	1.26±0.46	1.32±0.55	0.02	1.26±0.53	1.17±0.48	0.02
Non-Calcified Burden (x100), mm ³	1.18±0.42	1.26±0.51	0.03	1.20±0.48	1.12±0.46	0.03

Abstract 18 Figure 1 *P-value is calculated by comparing baseline and 1-year follow-up values for variables using paired t-test for continuous variables, and Pearson's chi-squared test for categorical variables. All values are expressed as Mean±SD, unless specified otherwise. PASI: Psoriasis Area Severity Index.