

Association between psoriasis and cardiometabolic comorbidities in a racially and ethnically diverse low-income primary care population

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BACKGROUND

- Associations between psoriasis and cardiometabolic comorbidities have been established using data from mostly White and/or high-income populations.
- Racial/ethnic minorities and people from lower socioeconomic strata are disproportionately affected by obesity and diabetes, highlighting potential differential risk of cardiometabolic comorbidities among diverse populations with psoriasis.

METHODS

- Study Design:** Population-based, cross-sectional analysis of patients seen in the San Francisco (SF) Health Network
- Data were extracted from medical records from August 2019 to November 2022 and validated through chart review

Outcomes:

- Prevalence differences (PD) for obesity, diabetes, hypertension and hyperlipidemia between patients with psoriasis and without psoriasis, stratified by race/ ethnicity
- Differences in differences defined as (PD in given race/ethnicity minus PD in White patients)

Statistical Analysis:

- Adjusted PDs were determined using multivariable logistic regression including age and sex as covariates
- Secondary analysis treating obesity as a covariate

RESULTS

- Psoriasis was statistically significantly associated with obesity, diabetes, hyperlipidemia, and hypertension
- Adjusting for BMI showed a decline in prevalence differences

DISCUSSION

- The association of psoriasis with comorbidities did not differ by race/ethnicity
- Our population had higher prevalence of cardiometabolic comorbidities compared with previous populations studies
- Epidemiologic research in dermatology should strive to include more racially, ethnically, and socioeconomically diverse populations

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Screening patients with psoriasis for cardiometabolic comorbidities in most dermatology clinics **remains insufficient** and our results suggest **education and intervention** regarding modifiable risk factors are particularly **important among vulnerable populations.**

Table 1. Demographic and Laboratory Characteristics of Study Population

	Psoriasis ^a , n (%)	No Psoriasis, n (%)	<i>P</i> value
No.	926 (2)	56061 (98)	
Age, Median (IQR)	59 (47-67)	55 (40-65)	<.001
Legal Sex^b			< 0.001
Male	561 (61)	26770 (48)	
Female	365 (39)	29250 (52)	
Other ^c		41 (0.1)	
Race/Ethnicity			< 0.001
Non-Hispanic Asian	212 (23)	15226 (27)	
Non-Hispanic Black	68 (7)	8136 (15)	
Non-Hispanic White	266 (29)	9515 (17)	
Hispanic	313 (34)	18521 (33)	
Non-Hispanic Other ^d	67 (7)	4663 (8)	
Insurance Status			0.001
Medicaid/Healthy San Francisco ^e	656 (71)	42129 (75)	
Medicare	257 (28)	12656 (23)	
Commercial	8 (1)	613 (1)	
None	5 (1)	663 (1)	
Smoking Status			<.001
Never	428 (46)	31361 (56)	
Current	187 (20)	9986 (18)	
Former	283 (31)	10806 (19)	
Unknown	28 (3)	3908 (7)	
Psoriasis Prevalence by Race/Ethnicity	Unadjusted	Adjusted*	
Non-Hispanic Asian	1.3%	1.4%	
Non-Hispanic Black	0.8%	0.8%	
Non- Hispanic White	2.5%	2.7%	
Hispanic	1.8%	1.7%	
Non-Hispanic Other	1.5%	1.4%	
Overall	1.6%		
	Median^f (IQR)	Median (IQR)	
BMI^{g,h} kg/m²	28 (24-33)	27 (24-31)	<0.001
Hemoglobin A1cⁱ %	5.8 (5.4-6.4)	5.7 (5.3-6.2)	<0.001
Total Cholesterol^j mg/dL	182 (149-216)	184 (155-214)	0.328
Triglycerides^k mg/dL	129 (89-191)	121 (84-181)	0.004
High Density Lipoprotein^l mg/dL	48 (41-61)	51 (42-62)	0.005
Low Density Lipoprotein^m mg/dL	99 (73-126)	101 (77-126)	0.207
Systolic Blood Pressureⁿ mmHg	127 (117-137)	125 (114-135)	<.001
Diastolic Blood Pressure mmHg	78 (71-84)	77 (70-83)	0.013

Table 2. Prevalence Differences (PD) of Cardiometabolic Comorbidities

	Psoriasis, n (%)	No Psoriasis, n (%)	PD* (%) (95%CI)	PD^ (%) (95%CI)
Hypertension^a				
Non-Hispanic Asian	121 (57)	6688 (44)	13 (7-18)	11 (6-17)
Non-Hispanic Black	52 (76)	4152 (51)	10 (0.4-20)	9 (-2-19)
Non-Hispanic White	112 (42)	3393 (36)	1 (-3-6)	-0.3 (-5-4)
Hispanic	142 (45)	5589 (30)	5 (1-10)	4 (-1-8)
Non-Hispanic Other	31 (46)	1641 (35)	6 (-4-15)	4 (-6-14)
Combined	458 (50)	21463 (38)	5 (2-7)	3 (1-6)
Hyperlipidemia^b				
Non-Hispanic Asian	160 (75)	10663 (70)	5 (-1-11)	3.3 (-2-9)
Non-Hispanic Black	41 (60)	3171 (39)	13 (2-23)	10 (-0.4-21)
Non-Hispanic White	166 (62)	4779 (50)	8 (2-14)	6 (1-12)
Hispanic	204 (65)	9955 (54)	3 (-2-8)	1 (-4-6)
Non-Hispanic Other	41 (61)	2113 (45)	9 (-2-20)	7 (-4-18)
Combined	612 (66)	30681 (55)	6 (3-9)	5 (2-8)
Diabetes^c				
Non-Hispanic Asian	72 (34)	3911 (26)	7 (2-13)	6 (1-12)
Non-Hispanic Black	26 (38)	1868 (23)	7 (-2-16)	5 (-3-14)
Non-Hispanic White	52 (20)	1354 (14)	3 (-1-7)	2 (-2-6)
Hispanic	103 (33)	4280 (23)	3 (-2-8)	2 (-3-6)
Non-Hispanic Other	15 (22)	959 (21)	-1 (-10-9)	-3 (-12-6)
Combined	268 (29)	12372 (22)	3 (1-6)	2 (-1-4)
Obesity^{d,e,f}				
Non-Hispanic Asian	41 (22)	1538 (12)	10 (4-16)	
Non-Hispanic Black	28 (51)	2504 (43)	10 (-3-23)	
Non-Hispanic White	92 (42)	2415 (33)	9 (3-16)	
Hispanic	151 (56)	7490 (49)	8 (2-14)	
Non-Hispanic Other	27 (50)	1298 (39)	11 (-4-21)	
Combined	339 (43)	15245 (34)	10 (7-14)	