

# Psoriasis Does Not Increase the Mortality in Acute Myocardial Infarction Patients: A Nationwide analysis

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## Background

- Severe psoriasis increases cardiovascular risk but there is limited data comparing overall mortality and outcomes in acute myocardial infarction (AMI) patients with psoriasis versus without psoriasis.
- The objective of our study is to compare the outcomes and the predictors of mortality between 2 groups.

## Methods

- The National Inpatient Sample (NIS) is an all-payer inpatient database in the US which contains more than 15 million weighted discharges every year.
- We queried NIS database 2014 for AMI using ICD-9 CM diagnostic code 410. Of these, ICD-9 CM codes 696.0 and 696.1 were used to identify psoriasis patients.
- Discharge weights were used to calculate national estimates. Using SPSS22, demographics and independent predictors were analyzed using chi-square test and multivariable binary logistic regression model.

## Results

- We identified 118,159 in-hospital AMI patients in 2014. Of these, 658 psoriasis patients were identified. Overall mortality was lower in the psoriasis group (3.3% vs. 5%) (p<0.001).

Comorbidities were more prevalent in the psoriasis group (<0.001) (Table 1). The risk of mortality in AMI with the psoriasis group was higher with diabetes (OR 2.116, 95% CI 1.25 – 3.58, p=0.005), dysrhythmias (OR 7.537, 95% CI 4.13 – 13.75, p<0.001), coronary atherosclerosis (OR 2.517 95% CI 1.01 – 6.26, p=0.047) and other neurological disorders (OR 3.713, 95% CI 1.82 – 7.55, p <0.001) (Table 2).

**Table 1. Baseline Characteristics of Acute myocardial infarction patients without Psoriasis versus with Psoriasis**

Table 1. Baseline Characteristics of the Acute Myocardial Infarction Patients Without versus With Psoriasis				
Variables	No Psoriasis	Psoriasis	Overall	P-value*
Unweighted Index admission	117,501	658	118,159	
Weighted Index admission	587,505	3,290	590,795	
<b>Age in years at admission</b>				<0.001
18-44	5.3%	3.3%	5.3%	
45-64	38.2%	47.6%	38.3%	
65-84	43.8%	42.6%	43.8%	
85>	12.7%	6.5%	12.7%	
<b>Indicator of Sex</b>				<0.001
Male	61.8%	64.7%	61.8%	
Female	38.2%	35.3%	38.2%	
<b>Died during hospitalization</b>	5.0%	3.3%	5.0%	
<b>Length of Stay &gt;13 days</b>	5.6%	7.0%	5.6%	
<b>Race</b>				<0.001
White	75.9%	85.8%	76.0%	
Black	10.8%	4.7%	10.7%	
Hispanic	7.4%	3.9%	7.4%	
<b>Co-morbidities<sup>#</sup></b>				
Deficiency anemias	16.4%	14.4%	16.4%	0.002
Chronic pulmonary disease	21.4%	26.9%	21.4%	<0.001
Coagulopathy	5.5%	8.1%	5.6%	<0.001
Depression	8.2%	9.3%	8.2%	0.025
Diabetes, uncomplicated	31.2%	35.4%	31.2%	<0.001
Diabetes with chronic complications	7.3%	9.9%	7.4%	<0.001
Hypertension	74.0%	77.5%	74.0%	<0.001
Hypothyroidism	11.8%	12.9%	11.8%	0.053
Other neurological disorders	6.2%	4.3%	6.2%	<0.001
Obesity	16.9%	26.4%	16.9%	<0.001
Peripheral vascular disorders	12.4%	17.0%	12.5%	<0.001
Renal failure	20.8%	18.1%	20.8%	<0.001
Valvular diseases	0.2%	0.5%	0.2%	0.006
Rheumatoid arthritis/ CVD <sup>p</sup>	2.5%	7.4%	2.5%	<0.001
Congestive heart failure	0.7%	1.2%	0.7%	<0.001
History of smoking	18.6%	25.1%	18.6%	<0.001
GERD <sup>q</sup>	17.6%	22.8%	17.6%	<0.001
Insomnia	1.0%	2.1%	1.0%	<0.001
Cardiac dysrhythmias	31.6%	29.5%	31.6%	0.008
Dyslipidemia	64.7%	69.0%	64.8%	<0.001
Migraine	1.5%	2.0%	1.5%	0.035
Coronary atherosclerosis <sup>f</sup>	82.7%	87.2%	82.7%	<0.001

\*Significant P-values ≤0.05 at 95% confidence interval <sup>#</sup>Variables are AHRQ Co-morbidity measures <sup>p</sup>Collagen vascular diseases <sup>q</sup>Gastroesophageal reflux disease <sup>f</sup>Includes other heart diseases

**Table 2. Multivariable Predictors of mortality in acute myocardial infarction patients without psoriasis versus with psoriasis.**

Table 2. Multivariable Predictors of Mortality in Acute Myocardial Infarction Patient Without Psoriasis versus With Psoriasis								
Variables	No Psoriasis			Psoriasis			P-value <sup>§</sup>	
	Odds ratio	95% Confidence Interval	P-value <sup>§</sup>	Odds ratio	95% Confidence Interval	P-value <sup>§</sup>		
<b>Co-morbidities*</b>								
Deficiency anemias	0.867	0.839	0.896	<0.001	1.118	0.573	2.182	0.745
Coagulopathy	1.792	1.721	1.866	<0.001	1.572	0.783	3.157	0.204
Depression	0.666	0.633	0.702	<0.001	0.913	0.431	1.936	0.813
Diabetes, uncomplicated	1.024	0.995	1.054	0.102	2.116	1.250	3.582	<b>0.005</b>
Diabetes with chronic complications	0.717	0.681	0.755	<0.001	1.927	0.948	3.917	0.070
Hypertension	0.621	0.604	0.639	<0.001	0.530	0.311	0.905	0.020
Hypothyroidism	0.972	0.936	1.010	0.144	0.296	0.111	0.788	0.015
Other neurological disorders	1.816	1.745	1.890	<0.001	3.713	1.825	7.553	<0.001
Obesity	0.686	0.659	0.715	<0.001	1.464	0.885	2.421	0.138
Peripheral vascular disorders	1.233	1.191	1.276	<0.001	0.601	0.336	1.074	0.086
Psychosis	0.719	0.661	0.783	<0.001	1.868	0.578	6.040	0.297
Smoking	0.763	0.735	0.792	<0.001	1.097	0.568	2.119	0.784
Renal failure	1.490	1.446	1.536	<0.001	0.285	0.130	0.625	0.002
GERD	0.679	0.652	0.707	<0.001	0.624	0.294	1.324	0.219
Dysrhythmias	1.842	1.792	1.893	<0.001	7.537	4.130	13.756	<0.001
Dyslipidemia	0.524	0.509	0.539	<0.001	0.423	0.209	0.858	0.017
Coronary atherosclerosis <sup>a</sup>	0.773	0.749	0.798	<0.001	2.517	1.011	6.268	<b>0.047</b>

\*Variables are AHRQ Co-morbidity measures <sup>a</sup>Includes other heart diseases <sup>§</sup>Significant P-values ≤0.05 at 95% confidence interval

## Conclusion

- Our study showed lower overall mortality in spite of the higher prevalence of comorbidities in AMI patients having Psoriasis which may be reflective of larger pool of mild Psoriasis cases compared to severe ones. Preventive strides to bring down comorbidities can get us even better results.