

# Comparing Premature versus Non-Premature Coronary Artery Disease Diagnosed via Coronary CT Angiography (CCTA)

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## Introduction

The emerging risk factors of obesity and metabolic syndrome have been established in contemporary older cohorts with clinical CAD, but it is unclear if this risk profile remains important in subclinical disease, particularly in younger patients. This study aimed to review clinical demographics and coronary CT angiography (CCTA) results of symptomatic patients stratified by age to define the cardiovascular risk profiles of those with both clinical (obstructive) and subclinical (non-obstructive) CAD.

## Methods

In this retrospective study, clinical demographics, comorbidities, and reports of CCTA imaging from May-June of 2020 were reviewed. Patients were stratified by age into premature (females <65 years old and males <55 years old) and non-premature groups for comparison. Numeric data were analyzed in its raw form whereas qualitative data was coded and analyzed as categorical variables. T-table tests were used to compare nominal data points between groups while  $\chi^2$  was used to analyze ordinal variables.

## Results

There were 118 patients with comparable data in regard to recorded demographics, comorbidities, and CCTA imaging results. Of these 118 patients, 48 were in the premature age category and 70 were of the non-premature age. There were a total of 73 people found to have coronary disease by imaging with 24 being premature and 49 being non-premature.

Figure 1. Comparing Comorbidities in Those with CAD  $p > 0.05$

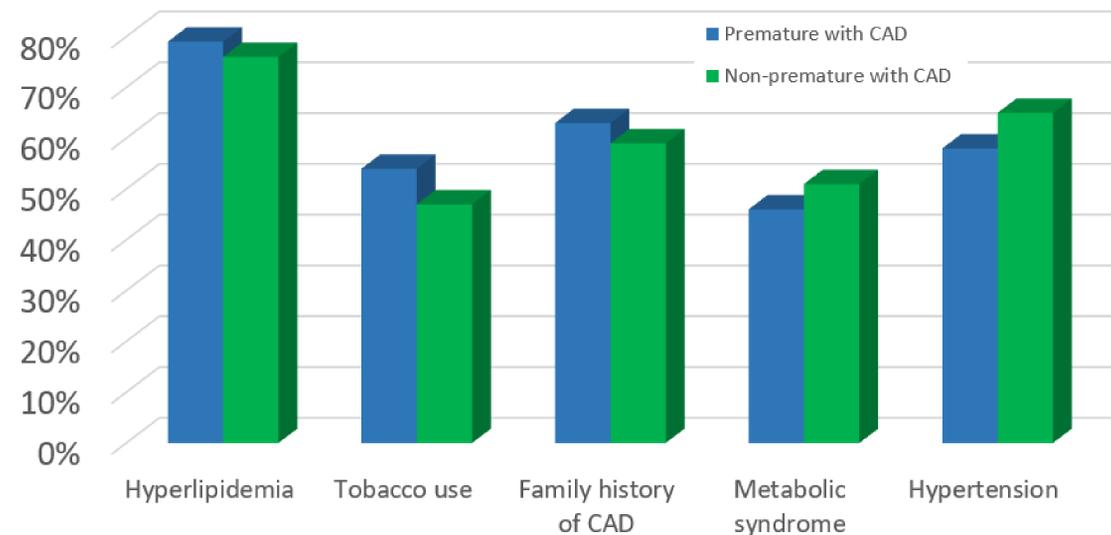


Figure 2. Comparing Severity of CAD  $p < 0.05$

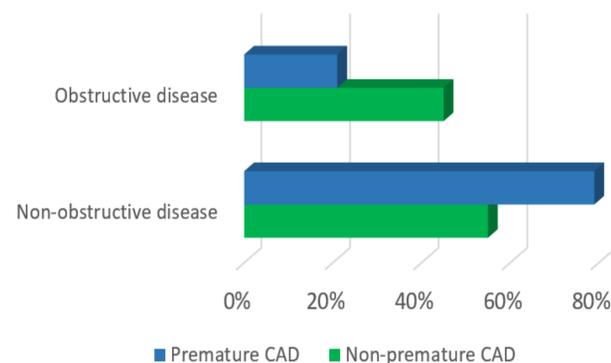
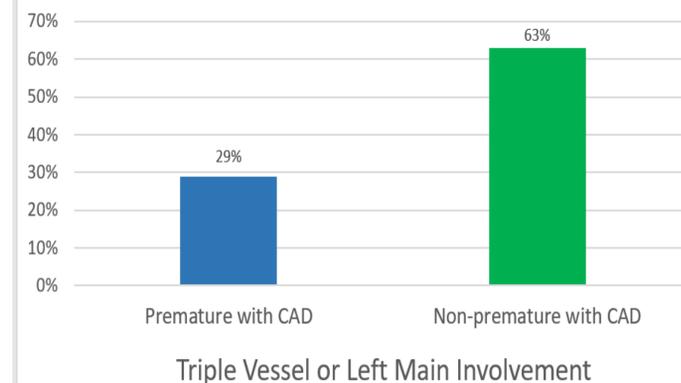


Figure 3. Comparing Vessel Involvement  $p < 0.05$



## Results continued

For both age groups with CAD, hyperlipidemia was the most prevalent risk factor (79% for the premature and 76% for non-premature). Other comorbidities such as tobacco use, family history, metabolic syndrome and hypertension were compared. There was no statistical significance between groups for comorbidities.

For those with CAD, the premature population was more likely to have non-obstructive disease when compared to the non-premature group (79% vs 55%,  $p=0.045$ ) and was less likely to exhibit triple vessel disease or have left main involvement (29% vs 63%,  $p=0.017$ ).

## Discussion

In this cohort of symptomatic patients referred for CCTA to assess for the presence of CAD, the risk profiles of younger patients with disease did not significantly differ from older patients with disease, and younger patients not surprisingly exhibited less severe disease than older patients. Thus, modifiable environmental risk factors remain clinically important in younger patients as they do in the older population.

## References

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