AGE DISTRIBUTION OF MYOCARDIAL INFARCTION PATIENTS ON TESTOSTERONE: THE LOW T EXPERIENCE

Robert S Tan MD, MBA[1,2], Gary Mosseau PA[1], William Reilly MD[1]

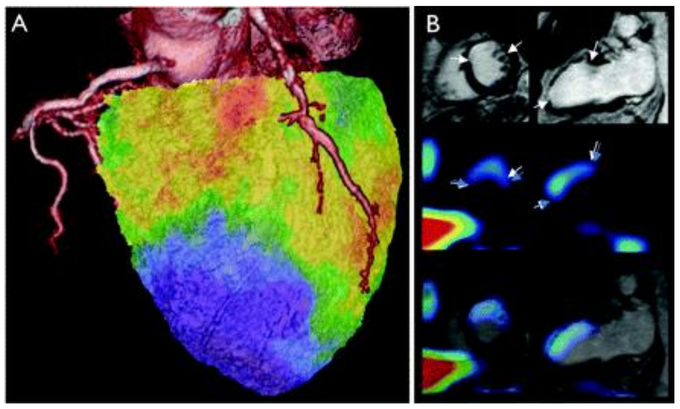
Low T Institute[1], University of Texas[2]

BACKGROUND

There are-ongoing concerns for safety with testosterone therapy. Our goal was to assess if MI occur at an earlier age in patents with testosterone therapy among our Low T Center patients. These 48 community based centers across the United States have strict protocols requiring regular 1-2 week monitoring in the office for efficacy and safety.

MATERIALS & METHODS

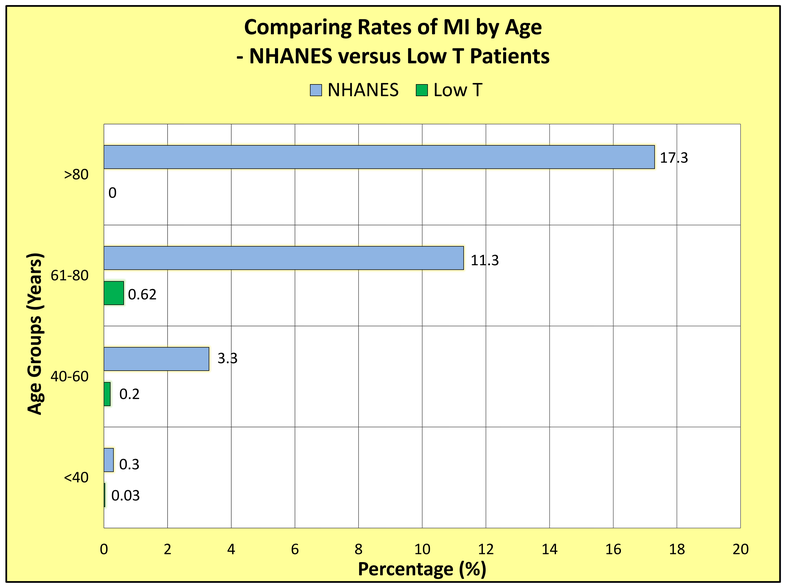
Following IRB application and GCP training, we conducted a retrospective analysis of patients who had MI post-testosterone therapy. Data was extracted from our electronic health record (Advance MD) of the multi-site Low T Centers. Prior to extraction of data, ICD-9 codes were updated to ICD-10, with attention to MI. We also did case findings on patients who had MI and reviewed risk factors.



Representative PET of patient with MI; ^{18}F-FDG PET images demonstrated severe defects in the apex and lateral wall consistent with infarct scar **(blue)**. However, there was preserved ^{18}F-FDG uptake in the septum and most of the anterior wall, as well as in the inferior wall, consistent with large areas of viable myocardium **(green and red)**

RESULTS

A total of 96,065 charts of patients seen between 2009-2016 were reviewed. Using ICD definition of MI (ICD 9: 412 & ICD-10: I21.29), there were 174 identified cases of MI, giving an overall prevalence of 1.8 cases per 1000 male adults. The rate of MI by age is reported below: <40 yrs. = 0.03%, 40-60 yrs. = 0.2%, 61-80 yrs. = 0.62%, > 80 yrs. = 0. The rate of MI was compared to the NHANES data set which was <40 yrs. = 0.3%, 40-60 yrs. = 3.3%, 61-80 yrs. = 11.3%, > 80 yrs. = 17.3% respectively. Comparative statistics were applied for the 2 groups and the rate ratio (RR) for MI in the Low T group versus the NHANES group was 0.1, 0.06, 0.05, 0 (p= 0.0001) respectively.



The increase of MI incidence with age in both data sets was compared for those <40 years & 61-80 years. NHANES RR = 38 vs. Low T RR = 21.

Table of Relative Risk of Age - NHANES vs Low T Patients

	NHANES	Low T
<40 yrs.	0.30	0.03
61-80 yrs.	11.30	0.62
RR	37.67	20.67

DISCUSSION

Patients who get MIs may or may not be receiving testosterone concurrently. The rate of MI is known to be a function of age. We find that our rate of MI increases with age, akin to other population data sets, except after 80. We postulate that we have few patients (147) in that age group and hence did not detect MI. Testosterone treated patients in our cohort have consistently lower rates of MI than community based models at every age group.

CONCLUSIONS

This study further supports a non-associative role of testosterone with MI, even suggesting a protective effect of testosterone against MI, considering finding lower rates of MI in all age groups with patients on testosterone as compared to a general community sample. Our study shows no evidence to suggest that testosterone leads to the development of MI at an earlier age. MI rates rise with age in testosterone treated patients, similar to community models. There are limitations to this observational study and causal links cannot be established.

For more information on our work on testosterone research: www.lowtinstitute.org