WHO WERE THE PATIENTS ON TESTOSTERONE THAT HAD MYOCARDIAL INFARCTIONS? THE LOW T EXPERIENCE

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BACKGROUND

- Controversies abound on whether testosterone causes myocardial infarctions (MI). Some studies show an association of testosterone therapy with MI, while others show a protective or neutral effect.
- The association of MI with testosterone treatment seems to be linked to age or underlying medical conditions.
- In general, the Low T Centers, treat younger, relatively healthier men who are hypogonadal with injectable testosterone. While our rates of MI in our treatment group was very low, we performed case finding and root cause analysis of these cases of MI in our practice.

MATERIALS & METHODS

- After IRB approval, cases of MI were identified by ICD-9 coding, using the electronic medical record.
- Conference calls were held with centers to ensure that each patient was asked specifically for MI and that coding was accurate.
- 40 Centers were examined. Interviews were also performed on patients & families of patients with MI, and cardiac risks factors were identified.
- The data was entered into a spreadsheet and descriptive as well as comparative statistics performed.

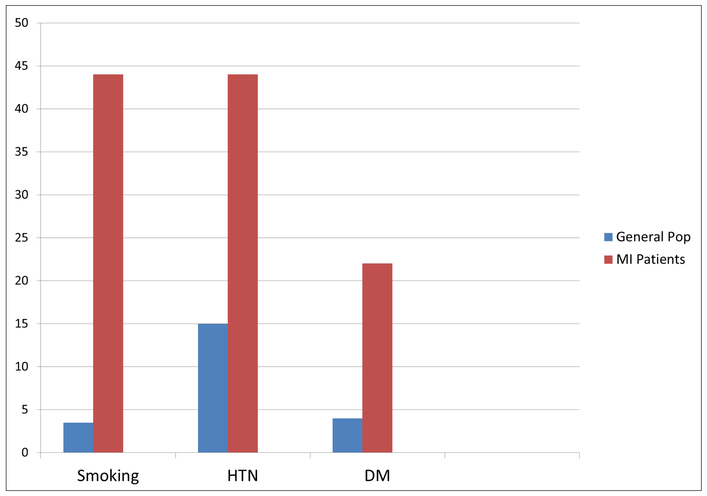
Our patients receive injection testosterone cypionate every week or 2 weeks,

RESULTS

- 48,668 charts were reviewed and about 24,334 patients received testosterone treatment.
- Of these, there were 9 cases of new MI and 46 patients with pre-existing MI. Of the 9 patients, all had risk factors except one.
- Our MI rates at 45 per 100,000 are very low in comparison to managed care (Kaiser Permanente) rates, which were 208 per 100,000.

Study	Rate	Comments
United States National Hospital Discharge Survey 2002	242	26 year study, and noted case fatality rates decreased over time.
New York State Registry (1996-2008)	71.6	13 year study, and noted decrease mortality with time
Marshfield, Wisconsin Epidemiology Study 2002	292.4	6 year study of MI rates in stable population in WI
Fukushima prefecture, Japan 2013	37.9	Rates of MI were compared before & after the Tsunami
Kaiser Permanente, Northern California, 2008	208	The average of rates of MI from the 4 U.S. registries approximates that of Kaiser at 203 per 100,000
Low T Centers, United States, 2014	30.0	Patients received testosterone injections

Of those who were on testosterone and had MI, 44% were smokers or had hypertension (HTN), 22% had Diabetes (DM). In comparison the prevalence of smoking was 3.5%, HTN 15%, DM was 4% in the overall testosterone treated group. When chi square was applied for differences between the 2 groups (smoking, HTN, DM), p= 0.001.



Prevalence (%) of risk factors in general Low T patients against those who smoked

DISCUSSION

- Most epidemiological studies support the cardio-protective role of endogenous studies.
- Small studies have shown testosterone to be a vasodilator and positively influencing some clotting factors but negatively influencing others.
- Recent 2 studies results were controversial because of study designs.
- Our study results differed partly because of our careful patient selection, close monitoring and perhaps the younger age of our study population.

CONCLUSIONS

Our study showed that testosterone therapy is not causal of MI. If carefully monitored, testosterone treatment in a younger population was safe and established risk factors such as smoking, hypertension and diabetes are associated with higher rates of MI in our testosterone treated patients.

For more information on our work on testosterone research: