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A2110
JACC March 17, 2015
Volume 65, Issue 10S

Vascular Medicine

CHRONOBIOLOGICAL PATTERNS OF ACUTE AORTIC DISSECTION IN MARFAN SYNDROME PATIENTS: DATA FROM THE INTERNATIONAL REGISTRY OF ACUTE AORTIC DISSECTION (IRAD)

Poster Contributions
Poster Hall B1
Sunday, March 15, 2015, 9:45 a.m.-10:30 a.m.

Session Title: Predictors and Clinical Management of Aortic Disease
Abstract Category: 45. Vascular Medicine: Non Coronary Arterial Disease
Presentation Number: 1191-341

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Background: Various chronobiological effects have been noted to affect the incidence of cardiovascular events, including myocardial infarction and acute aortic dissection (AAD). Previous reports have profiled these patterns in AAD. However, there have been no previous studies in the Marfan syndrome (MFS) population regarding the chronobiology of AAD.

Methods: We used data from 177 patients (115 males) with MFS enrolled in the International Registry of Acute Aortic Dissection (IRAD) database from 1996 to 2012. Chi-square test was used to assess the unique incident-time profile of AAD in this population. We subdivided time into multiple components, including time of day, month and season when AAD occurred. We also examined the interaction of possible contributing factors such as age, gender and smoking history with the time variation in AAD presentation.

Results: Mean age of patients was 38.1, with 68% suffering from a Type A dissection and the rest type B. In our MFS cohort, the most significant associations seen were regarding the time of day and season of the year when AAD occurred. Specifically, MFS patients were more likely to experience AAD during the winter/spring season (Nov-Apr) than other seasons of the year (58% vs. 42%). AAD was more likely to occur during the first part of the day (6AM- 6PM) than the second part of the day (66% vs. 34%). Males were more likely to experience AAD during the morning hours than females, who had a more equal likelihood of AAD throughout the day (p=0.07).

Conclusion: Our study examined the chronobiology of AAD in MFS patients in the IRAD cohort. Our results indicate that similar to AAD in the general population, male MFS patients tend to experience more events during the early hours of the day and during the winter months. These findings are significant for their reinforcement of the various time-related factors that may play pathophysiological roles in AAD that are similar in both MFS and non-MFS patients. In addition, it is possible that treatment could target these particularly vulnerable time periods with respect to other manageable risk factors in these time windows.