CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)

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Project Number

36568

Project Title

Searching for Commonalities among Patients with a Bicuspid Aortic Valve

Abstract

Objectives/Goals

To search for patterns, trends, and commonalities among patients with a bicuspid aortic valve in order to help diagnose or predict the condition in others.

Methods/Materials

I created a 12 question survey on Surveymonkey.com with questions about BAV, such as the age of diagnoses, how BAV was diagnosed, demographics, gender, family history, other heart conditions, medications, and lifestyle. I then posted a link to the survey on various Facebook groups (such as BAV Group, Children with Congenital Heart Defects, Aortic Health group) and asked people to consider filling out the survey if they had BAV or had a child with BAV. After approximately 2 months I printed out the surveys (273) and began to analyze the data.

Results

After looking at the survey results many of the questions were split nearly 50/50, so there was no pattern or commonality (Sports, Surgery, Medication, Gender, Symptoms). Geographically, BAV is spread pretty evenly all over the world. The few questions where there was a distinct trend were: Family History#I can conclude that BAV is not often found in family history; Age of Diagnosis#it is most often diagnosed under 5 years of age, Lifestyle Restrictions#most BAV patients have no restrictions, and Related Heart Problems-75% of BAV patients also have other heart conditions most commonly an aortic aneurysm and stenosis. From this I can conclude that BAV patients are typically diagnosed at a young age and often develop more heart issues as a result but do not have a family history and little lifestyle restriction.

Conclusions/Discussion

After analyzing all of the survey data I can conclude that, unfortunately, there are no commonalities among patients with BAV that would be useful in predicting who else might be at risk of the disease or pass it on. I can conclude that if one is diagnosed with BAV it is very likely that they will develop other heart/aortic problems. In the future I would like to continue my research on this issue#several of the questions and responses led me to think of new questions#for example: those with a family history-who in the family has BAV, is it siblings? Parents? Or more distant relatives? I#d also like to survey cardiologists#there seems to be a pretty wide list of medications and lifestyle restrictions and I#d like to learn more about why there ish#t more consistency in treatment.

Summary Statement

I created a survey for patients with a bicuspid aortic valve in order to find patterns or trends in hopes of being able to use these trends to predict future patients of BAV.

Help Received

My mom helped type the report, my whole family helped put the board together. My mom used her Facebook account to help me post links to the online survey. I also spoke with my cardiologist and the John Ritter Foundation for advice on how to begin my project.

Preliminary