Best Predictors for Major Food Allergy Reactions

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Abstract

I have recently received a dataset with information about 680 Children's Hospital of Philadelphia food challenges and whether they had a severe reaction or a mild reaction. Food challenges are appointments where a child is given a food that he has been tested to have a small or nonexistent allergy for to see if they will react. If they don't, they are cleared of the allergy and can eat it outside of the controlled environment. In each of the 680 tests in this dataset the child reacted and data was recorded about the type of food, how much they ate, how they reacted to it, and how severe the reaction was based on a standardized scale. The goal with this data is to find out which of the 20+ columns is the best predictor for whether someone will have a severe reaction. For example, does a history of asthma make someone more likely to have a severe reaction? Or does sneezing during the test mean that they will have a severe reaction. So far, I have done a logistic regression with the data. Some findings have surfaced, but for the final project I would need to find what variables to drop and focus on analyzing the results. Below are some screenshots of the data and work that I have done with it: The first few entries in the dataset https://i.imgur.com/TEl2ms3.png A heatmap of the variables to determine which need to be dropped https://i.imgur.com/qjZ1FLU.png

978-1-7281-7520-1/20/$31.00 ©2020 IEEE