The aim of this exploratory data analysis (EDA) was to investigate the potential relationships between various medical indicators and cardiovascular risk, as well as to evaluate the predictive power of these indicators. The statistical question driving this analysis was whether certain medical indicators could serve as predictors of cardiovascular risk.

Upon conducting the EDA, we analyzed a dataset containing information on age, pulse rate, blood pressure readings, glucose levels, potassium concentration, troponin levels, and health class (positive or negative for cardiovascular risk). We employed histograms, scatter plots, logistic regression, and statistical tests to uncover insights. Notably, age, potassium concentration, and troponin levels emerged as the most significant factors associated with cardiovascular risk. Age displayed a consistent increase in risk, while higher potassium and troponin levels were strongly linked to a higher likelihood of positive health class.

However, our analysis did reveal certain limitations and areas that could have been explored more thoroughly. We felt that the absence of additional lifestyle variables, such as diet, physical activity, and family history of heart diseases, could have contributed to a more comprehensive analysis. These variables might have provided a holistic perspective on the factors influencing cardiovascular risk. Additionally, the small sample size and the presence of quasi-separation in the logistic regression model posed challenges. The assumptions of linear relationships between predictors and the log-odds of the response variable might not hold true for all variables.

Moreover, while we focused on the relationship between individual variables and cardiovascular risk, we may have missed interactions or non-linear relationships that could have enriched our analysis. Furthermore, a more in-depth understanding of medical terminology and domain knowledge would have been beneficial to ensure accurate interpretation of the results.

In conclusion, the EDA shed light on significant predictors of cardiovascular risk, particularly age, potassium concentration, and troponin levels. However, the analysis would have benefited from including lifestyle variables and investigating potential interactions. Acknowledging the assumptions made and understanding the limitations of the dataset, our exploration serves as a foundation for further research in the realm of cardiovascular health.