A picture containing invertebrate

Description automatically generated0

**“Myocardial infarction complications Data Set”**

Name | Course Title | Date

**Submitted by:**

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**Data Set Information:**

Problems of real-life complexity are needed to test and compare various data mining and pattern recognition methods. The proposed database can be used to solve two practically important problems: predicting complications of Myocardial Infarction (MI) based on information about the patient (i) at the time of admission and (ii) on the third day of the hospital period. Another important group of tasks is phenotyping of disease (cluster analysis), dynamic phenotyping (filament extraction and identification of disease trajectories) and visualisation (disease mapping).  
MI is one of the most challenging problems of modern medicine. Acute myocardial infarction is associated with high mortality in the first year after it. The incidence of MI remains high in all countries. This is especially true for the urban population of highly developed countries, which is exposed to chronic stress factors, irregular and not always balanced nutrition. In the United States, for example, more than a million people suffer from MI every year, and 200-300 thousand of them die from acute MI before arriving at the hospital.  
The course of the disease in patients with MI is different. MI can occur without complications or with complications that do not worsen the long-term prognosis. At the same time, about half of patients in the acute and subacute periods have complications that lead to worsening of the disease and even death. Even an experienced specialist can not always foresee the development of these complications. In this regard, predicting complications of myocardial infarction in order to timely carry out the necessary preventive measures is an important task.

**Problems to solve:** In general columns 2-112 can be used as input data for prediction. Possible complications (outputs) are listed in columns 113-124.  
There are four possible time moments for complication prediction: on base of the information known at  
1. the time of admission to hospital: all input columns (2-112) except 93, 94, 95, 100, 101, 102, 103, 104, 105 can be used for prediction;  
2. the end of the first day (24 hours after admission to the hospital): all input columns (2-112) except 94, 95, 101, 102, 104, 105 can be used for prediction;  
3. the end of the second day (48 hours after admission to the hospital) all input columns (2-112) except 95, 102, 105 can be used for prediction;  
4. the end of the third day (72 hours after admission to the hospital) all input columns (2-112) can be used for prediction

**Method:**

LogisticRegression

**Experiment:**

penalty='l1',

solver='saga',

C=1.0,

random\_state=33,

max\_iter=10000