A summary of the metadata is presented below to the general audience:

**“Metadata**

* **Dataset**: A publicly accessible dataset of 200 female patients.
* **Ethics Approval**: Approved by the Inonu University Non-invasive Clinical Research Ethics Committee (Decision No: 2023/4976).
* **Statistical Software**: SPSS 28.0 (IBM Corp., Armonk, NY, United States)
* **Machine Learning Libraries**: CatBoost, AdaBoost, XGBoost, LightGBM, EBM

**Objective**

To investigate the possibility of predicting Angina Pectoris (AP) in females and identify associated risk factors.

**Dataset and Variables**

**Input Variables**

* **Age**: Continuous
* **Smoke**: Categorical (1=current-, 2=ex-, 3=non-smoker)
* **Cigarette**: Continuous (average number of cigarettes per day)
* **Hyper**: Categorical (1=absent, 2=mild, 3=moderate)
* **Angfam**: Categorical (1=yes, 0=no)
* **Myofam**: Categorical (1=yes, 0=no)
* **Strokefam**: Categorical (1=yes, 0=no)
* **Diabetes**: Categorical (1=yes, 0=no)

**Output Variable**

* **Status**: Categorical (0=no AP, 1=yes AP)

**Biostatistical Data Analysis**

* Pearson chi-square test
* Yates continuity correction test
* Fisher’s exact test
* Binary logistic regression
* Hosmer-Lemeshow and Omnibus tests

**Machine Learning Approaches**

**Algorithms Used**

1. **CatBoost**
2. **AdaBoost**
3. **XGBoost**
4. **LightGBM**
5. **Explainable Boosting Machine (EBM)**

**Validation**

* 5 times repeated 10-fold cross-validation

**Performance Metrics**

* Accuracy
* F1-Score
* Sensitivity
* Specificity
* Youden's index
* PPV and NPV
* AUC

**Calibration**

* Isotonic Regression

**Explainability and Calibration**

* Global and local annotations for model interpretability.
* Model calibration using isotonic regression for accurate probability estimates.”