**COIMBRA BREAST CANCER DASHBOARD REPORT**

**Introduction:**

* Purpose: To provide an overview of breast cancer-related health metrics and patient characteristics at Coimbra Hospital.
* Key stakeholders: Medical professionals, Oncology department, Public Health officials.

**Dashboard Overview:**

* Total Patients: 116
* Patients with Healthy Control: 52
* Patients with Breast Cancer: 64

**Health Metrics:**

* Glucose Levels:
  + Diabetes: 9.48%
  + Prediabetes: 23.28%
  + Normal: 67.24%
* BMI Category:
  + Underweight: 1
  + Normal Weight: 39
  + Overweight: 37
  + Obese: 39
* Homa Category:
  + Normal: 27.59%
  + Mild Insulin Resistance: 42.24%
  + Severe Insulin Resistance: 30.17%

**Patient Characteristics:**

* Age Distribution:
  + Histogram chart showing age distribution for patients with breast cancer and patients with healthy control.

**Health Control vs. Breast Cancer Analysis:**

* **Glucose Levels:**
  + Diabetes prevalence is higher among breast cancer patients (17.18%) compared to those in health control with zero.
  + Prediabetes is more common in breast cancer patients (29.68%) compared to health control (15.38%).
* **BMI Category:**
  + Overweight are more prevalent in breast cancer patients compared to the health control group.
  + Normal weight distribution is higher in the health control group.
* **Homa Category:**
  + Moderate to severe insulin resistance is more common in breast cancer patients, while health control has a higher percentage of individuals with normal and Mild insulin resistance Homa levels.

**Histogram Analysis:**

* Utilizing histogram charts for Adiponectin, Resistin, Mcp.1, Leptin, Insulin, and Age against patients with breast cancer and patients with health control.
* According to the Age-classification status, 17 patients within the age of 41 have breast cancer which is the most among the age groups while 3 patients of that age have healthy control.
* 13 patients each for both with healthy control and breast cancer have 6 Adiponectin more than others.
* 31 patients with 3 insulin level have their health under control while 21 patients with same level of insulin are positive to breast cancer.
* Identify any patterns or significant differences in the distribution of these biomarkers.

**Recommendations:**

* Consider additional screenings for diabetes and prediabetes in breast cancer patients.
* Develop targeted interventions for patients with severe insulin resistance.
* Explore correlations between biomarkers and breast cancer incidence for further research.

**Limitations:**

* The data is based on a specific period and may not represent long-term trends.
* External factors impacting health metrics may not be fully captured.

**Conclusion:**

* The Coimbra Hospital Breast Cancer Dashboard provides valuable insights into patient demographics, health metrics, and biomarkers.
* Further research and targeted interventions can enhance patient care and outcomes.

**Appendix:**

* Detailed definitions of health metrics, BMI categories, and Homa categories.
* Explanation of data sources and collection methods.