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Introduction :

Homocysteine, a sulfur-containing amino acid resulting from methionine degradation, is regulated by genetic and nutritional factors, notably B vitamins such as folic acid(B9) and cobalamin(B12). Elevated levels are associated with an increased risk of cardiovascular and thromboembolic diseases.

Objective :

This study aims to evaluate the relevance of homocysteine assay in various clinical conditions.

Materials and Methods :

- A retrospective descriptive study was conducted between January 2023 and February 2024.
- All requests for homocysteine assay received at the Biochemistry Laboratory of CHU Farhat Hached in Sousse were included.
- Assays were performed using the Beckman DxC 700 AU analyzer.



Results :

- A total of **138** requests were collected.
- The average age of patients was **47 ± 21** years with a sex ratio : **1.15**.
- In **53%** of cases, patients were admitted, while **47%** of requests came from outpatient consultations.
- Requests mainly originated from the internal medicine department (**56.5%**), followed by pediatrics (**11%**) and cardiology (**5.1%**) (**figure 1**).
- The primary indications were dominated by cardiovascular and thromboembolic causes in **62%** of cases, including deep vein thrombosis, pulmonary embolism, and ischemic stroke.
- The median level of homocysteine was **16.3 μmol/L [range : 3.27-339]**.
- **45%** of patients had hyperhomocysteinemia (**figure 2**).
- In **40%** of cases, vitamin B12 and B9 assays were associated with homocysteine assay.

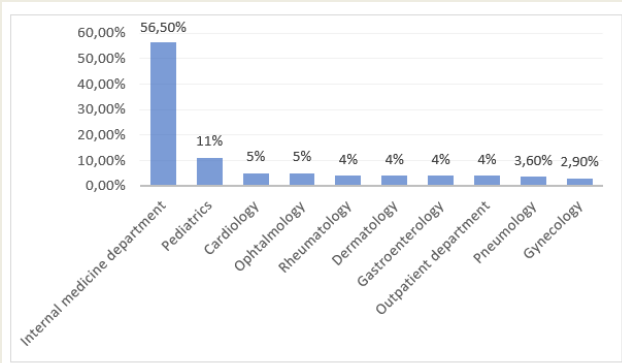


Figure 1 :Primary departments requesting the test

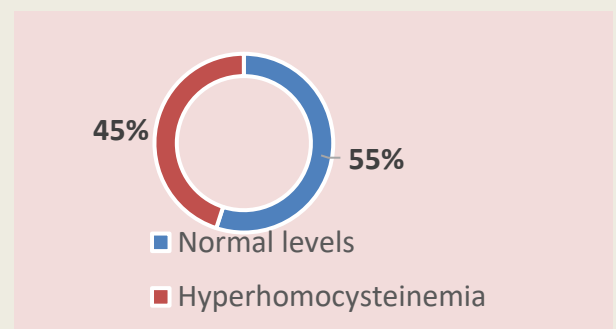


Figure 2: Homocysteine Levels

Conclusion :

Homocysteine serves as a predictive marker in cardiovascular and thromboembolic pathologies. Simultaneous evaluation of homocysteine levels and B12 and B9 vitamins is crucial for detecting associated deficiencies.