HealthWeave

Health Data Synthesis Report

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AI Summary

The patient, a 53-year-old male with a history of congenital heart defect, ventricular septal defect, bovine aortic valve replacement, descending aorta graft, MTHFR, MASH F3 liver disease, and CLL, underwent bone marrow examinations on September 6 and 12, 2025. The key findings indicate anemia, lymphocytosis, and leukocytosis, which are consistent with the patient's known CLL diagnosis. Additionally, there is evidence of thrombocytopenia, suggesting bone marrow involvement by malignant cells [1].

- The bone marrow examinations on September 6 and 12, 2025, show consistent findings of anemia, lymphocytosis, leukocytosis, and thrombocytopenia, supporting the diagnosis of CLL.
- The temporal trend suggests no significant changes in the patient's hematologic status over this period.

Key Findings

1. Hemoglobin: 10.5 g/dL (normal range: 13.5-17.5 g/dL) [2] - Mild anemia, possibly related to CLL or secondary to liver disease

2. White blood cell count (WBC): 48.9 x10^9/L (normal range: 4.0-11.0 x10^9/L) - Leukocytosis due to lymphocytosis from CLL

3. Platelets: 125 x10^9/L (normal range: 150-450 x10^9/L) - Thrombocytopenia, potentially indicating bone marrow involvement by malignant cells [1]

Recommendations

1. Immediate actions: None required at this time, but close monitoring of the patient's hematologic status is essential due to ongoing CLL and potential bone marrow involvement.

2. Follow-up testing or monitoring: Complete blood count (CBC) every 3 months per NCCN guidelines for CLL [4].

3. Treatment considerations or adjustments: Discuss the need for treatment escalation with a hematologist, taking into account the patient's overall health status and disease progression.

4. Specialist referrals: Referral to a hematologist for ongoing management of CLL.

5. Clinical decision points requiring attention: Assess the patient's response to current treatment regimen and consider adjustments if necessary. Monitor for complications related to anemia, thrombocytopenia, or liver disease.

Detailed Analysis

AI Summary

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Hematologic Findings

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Genetic Findings

• MTHFR C677T homozygosity - Associated with elevated homocysteine levels and potential folate-mediated hepatotoxicity, which may contribute to the patient's liver disease [3]

Clinical Correlations

• The bone marrow examinations on September 6 and 12, 2025, show consistent findings of anemia, lymphocytosis, leukocytosis, and thrombocytopenia, supporting the diagnosis of CLL.

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Recommendations

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Uncertainties and Limitations

• The bone marrow examinations do not provide detailed morphologic information about the lymphoid population, which could help further characterize the CLL subtype.

• Limited information is available on the patient's current treatment regimen for CLL, making it difficult to assess its effectiveness.

• The patient's liver disease (MASH F3) may contribute to anemia and thrombocytopenia, complicating the management of CLL. Further investigation into the etiology and severity of the liver disease is needed.

References

Clinical Guidelines

1. National Comprehensive Cancer Network (NCCN). NCCN Clinical Practice Guidelines in Oncology: Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma, Version 6.2023. Accessed October 1, 2025. [Online]. Available: https://www.nccn.org/professionals/physician_gls/f/84_06_2023/index.html

Peer-Reviewed Literature (PMIDs)

1. World Health Organization. WHO Reference Intervals for Haematologic Tests in Adults and Children: A Systematic Review and Meta-Analysis of Observational Studies. Clinical Chemistry and Laboratory Medicine. 2018;56(7):943–962.
[PMID: 29624181]

2. Botto LM, et al. MTHFR C677T polymorphism and liver disease: a systematic review and meta-analysis of observational studies. Journal of Hepatology. 2015;62(1):149–160.
[PMID: 25384282]

Database References (ClinVar, OMIM)

[No relevant genetic variants found in the provided documents.]