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Hemoglobin electrophoresis cpt code

Test Description The HBE test measures the levels of hemoglobin A2 and hemoglobin F in blood samples. The test can help diagnose and monitor hemoglobin variants and thalassemias. **Test Details** * Test code: LAB1313 * Quest code: 35489 * CPT codes: 83020, 85014, 85018, 85041 * Includes: Hemoglobin A2, Hemoglobin F, Hemoglobin S, Hemoglobin C, Hemoglobin E, and any hemoglobin variants **Specimen Requirements** * Minimum volume: 1 mL * Preferred specimen: Full EDTA (lavender-top) tube * Other acceptable specimens: Whole blood from a full EDTA (tan-top) tube * Patient information: Age and ethnicity are necessary for proper interpretation * Blood transfusions within the last 4 months may affect results **Test Results** * Turnaround time: Varies, but usually takes 1-5 days * Reference ranges: + Hemoglobin A2: 0.0-100.0% + Hemoglobin F: 0.0-100.0% + Hemoglobin A: 5.9-100.0% **Clinical Significance** The HBE test is useful for diagnosing and monitoring hemoglobin variants and thalassemias. Reflexive testing may include additional tests, such as the hemoglobin S solubility screen or acid hemoglobin electrophoresis. Note that I removed some of the technical details and focused on providing a general overview of the test. Let me know if you have any specific questions or if there's anything else I can help with! Hemoglobinopathies and Thalassemias Testing at Mayo Clinic Laboratories: Guidelines for Hemolysis Detection and Interpretation The detection of hemoglobinopathies and thalassemias is a crucial aspect of evaluating patients with anemia, microcytosis, or erythrocytosis. To ensure accurate results, several laboratory tests are available at Mayo Clinic Laboratories. **Transport Requirements** * Transport Container: Preferred – Lavender top (EDTA) tube * Specimen Volume: 10 mL * Collection Instructions: Send whole blood specimen in original tube. Do not aliquot. **Reject Criteria** * Hemolysis: + Clotted + Lipemia + Thaw/Other? **Test Descriptions and Reference Ranges** * Hemoglobin Electrophoresis: + Definitive results and an interpretative report will be provided. + Hemoglobin A: 5.9-77.2% (0-30 days), 7.9-92.4% (1-2 months), 54.7-97.1% (3-5 months), 80.0-98.0% (6-8 months), 86.2-98.0% (9-12 months), 88.8-98.0% (13-17 months), 90.4-98.0% (18-23 months), ≥95.8-98.0% (≥24 months) + Hemoglobin A2: 0.0-2.1% (0-30 days), 0.0-2.1% (1-2 months) **Clinical Significance** The detection and proper identification of hemoglobinopathies and thalassemias are essential for evaluating patients with anemia, microcytosis, or erythrocytosis. Molecular testing is available for confirmation, but not always required. **Additional Information** * Metabolic Hematology Patient Information (T810) is strongly recommended. * Recent transfusion information and most recent complete blood cell count results should be included in the specimen. Hemoglobin Variants and Disorders #### Age-Related Variations * **0-30 days:** 22.8-92.0% * **1-2 months:** 7.6-89.8% * **3-5 months:** 1.6-42.2% * **6-8 months:** 0.0-16.7% * **9-12 months:** 0.0-10.5% * **13-17 months:** 0.0-7.9% * **18-23 months:** 0.0-6.3% * **≥24 months:** 0.0-0.9% #### Hemoglobin Variants A multitude of hemoglobin variants have been identified. While many do not result in clinical or hematologic effects, they can be associated with symptoms like microcytosis, sickling disorders, hemolysis, erythrocytosis/polycythemia, cyanosis/hypoxia, anemia, and increased methemoglobin or sulfhemoglobin results. #### Protein Studies For many common hemoglobin variants (e.g., HbS, HbC, HbD, and HbE), protein studies are sufficient for definitive identification. However, some conditions may require molecular methods for confirmation due to the complexity of interactions and variable phenotypes. #### Molecular Testing Molecular testing is often necessary for accurate classification, especially in cases where there are multiple genetic variants (compound disorders). However, molecular methods without protein data can provide incomplete or misleading information due to limitations of the methods. Therefore, accurate classification requires the incorporation of protein analysis results. ### Common Hemoglobinopathies The most common hemoglobinopathies, in order of relative frequency, are: 1. Hb S (sickle cell disease and trait) 2. C 3. E 4. Lepore 5. G-Philadelphia 6. HbH disease 7. D-Los Angeles 8. Koln 9. Constant Spring 10. O-Arab Other variants associated with hemolysis, erythrocytosis/polycythemia, microcytosis, and cyanosis/hypoxia are routinely identified but may require communication of clinical findings to prompt indicated reflex testing options. ### Alpha-Thalassemia Genetic Variants Alpha-thalassemia genetic variants are very common in African Americans, occurring in approximately 30% of the population. Some conditions, such as HbH and Barts, can be identified through hemoglobin electrophoresis protocol. However, alpha-gene deletion and duplication testing is required for certain cases. Alpha-thalassemia conditions often require additional reflex testing to identify, particularly if there is a family history of a known hemoglobin disorder or prior therapy for such a condition. Patients presenting with unexplained lifelong/familial symptoms like hemolysis, microcytosis, erythrocytosis/polycythemia, cyanosis, or hypoxia should have this information clearly communicated to the laboratory to enable the addition of appropriate reflex testing. It's essential to note that recent transfusions may mask protein results, including hemoglobin electrophoresis, due to the presence of donor cells. Therefore, clear communication of prior therapy is strongly recommended. Some therapies can cause artefactual effects in protein studies, such as hydroxyurea and decitabine increasing hemoglobin F levels, voxelotor causing artefactual peaks, and gene therapy leading to alternate protein detection. Interpretive reports summarizing all testing, including the significance of findings, are issued for each patient. The laboratory utilizes various techniques, including capillary electrophoresis (using the CAPILLARYS System), high-performance liquid chromatography (HPLC), isoelectric focusing (IEF), mass spectrometry (MASS), and flow cytometry (HPFH). Hemoglobin Analysis Using High-Performance Liquid Chromatography

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