

To: **Dr. Manoj Agalawe-Bhandara**
924, Ganesh Nagar, Near Bansi Dairy,
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Bhandara - 441804
Contact:
Report Of: Mrs. ARCHANA PRAFUL FUNDE
Pt. Contact: 7378534080



Sample ID 2300136971
Patient ID 1002354262
Received on 15/07/2023 15:23
Registered on 15/07/2023 11:30
Reported on 16/07/2023 15:57
Referred by **DR. MANOJ AGALAWA**

Hemoglobinopathy Screening

Patient Name: Mrs. ARCHANA PRAFUL FUNDE Sample Type: Whole Blood EDTA
Date of Birth/Age: 23/07/1999 Gender: FEMALE City: LAKHANI
Method: High Performance Liquid Chromatography (HPLC) Blood Transfusion History: No
Referral Reason or Clinical History: _____

About the test

Hemoglobinopathy screening by high performance liquid chromatography is a blood test that is used for detecting quantitative and qualitative abnormalities of hemoglobin (Hb), namely, Thalassemia and Structural Hb variants (e.g. HbS) respectively. The test helps identify individuals with these disorders so that they can receive timely and appropriate treatment and care. Antenatal diagnosis of these disorders allows measures to reduce the chances of the birth of an affected baby. It is also possible to screen the newborns for hemoglobinopathies using this approach, thereby decreasing the mortality & morbidity associated with conditions like Sickle cell disorder.

Test findings

Hb Fraction	Observed Value (%)	Expected Value (%)
HbF	0.6%	<2%
P2*	3.0%	<4.6%
HbA0	88.3%	85 - 95%
HbA2/HbE	2.0*%	1.8 - 3.5%
HbD	Absent	Absent
HbS	Absent	Absent

*The mentioned P2 value from BioRad Variant-II HPLC system is equivalent of HbA1c value in BioRad D10 system

Interpretation

Chromatogram shows normal hemoglobin pattern.
Hb, PCV and RBC count are reduced, and red cell indices are macrocytic normochromic suggesting nutritional megaloblastic anemia due to vitamin B12/folic acid deficiency.

Suggestions

Serum vitamin B12 and folic acid estimation

Verified by
Mr. Pradip Kadam
Incharge Biochemistry

Dr. A. Dasgupta MD, PhD,
Consultant Hematopathologist

HPLC Findings

*Values outside of expected ranges

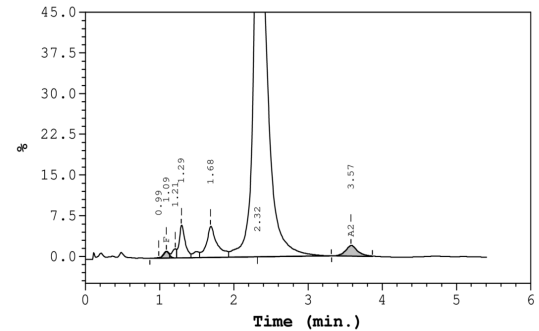
Patient Data

Sample ID: 2300136971
 Patient ID:
 Name:
 Physician:
 Sex:
 DOB:
 Comments:

Analysis Data

Analysis Performed: 07/14/2023 16:18:05
 Injection Number: 3819
 Run Number: 313
 Rack ID: 0001
 Tube Number: 2
 Report Generated: 07/14/2023 17:12:59
 Operator ID:

Analysis comments:



Peak Name	Calibrated Area %	Area %	Retention Time (min)	Peak Area
Unknown	---	0.0	0.99	871
F	0.6	---	1.09	12089
Unknown	---	0.7	1.21	12703
P2	---	3.0	1.29	57848
P3	---	5.3	1.68	101358
Ao	---	88.3	2.32	1699093
A2	2.0*	---	3.57	39571

Total Area: 1,923,534

F Concentration = 0.6 %

A2 Concentration = 2.0* %

Important Blood Indices (from CBC Analysis)

Parameters	Result	Reference Range	Units
Hemoglobin (Hb)	10.80 ⚠	12 - 15	g/dL
RBC Count	3.74 ⚠	3.8 - 4.8	$\times 10^6/\mu\text{L}$
Hematocrit	32.80 ⚠	36 - 46	%
Mean Corpuscular Volume (MCV)	87.70	83 - 101	fL
Mean Corpuscular Hb (MCH)	28.90	27 - 32	pg
Mean Corpuscular Hb Conc. (MCHC)	32.90	31.5 - 34.5	g/dL
RBC Distribution Width (RDW) (CV)	17.30 ⚠	11.6 - 14	%
RBC Distribution Width (RDW) (SD)	59.10 ⚠	39 - 46	fL

Notes:

- Recent blood transfusions and iron deficiency can interfere with the results, repeat testing is recommended three months after the last blood transfusion. In case of iron deficiency, it is recommended to evaluate the result post-correction of iron deficiency.
- Megaloblastic anemia can cause elevated HbA2 levels. A repeat assay is recommended after correction of VitB12 deficiency.
- Mild to moderately elevated fetal hemoglobin (HbF) values are observed during pregnancy, hypoxia, chronic kidney disease, use of certain drugs, myelodysplastic syndromes (MDS), aplastic anemia and conditions of stress hemopoiesis.
- Cases with borderline HbA2 levels (3.1-3.9%) could represent Silent Beta-thalassemia trait, or co-existent iron deficiency or Alpha-thalassemia in a case of Beta-thalassemia trait. They need to be investigated further by appropriate tests.
- Confirmatory molecular tests for Beta-thalassemia traits and abnormal hemoglobin disorders (e.g. HbS, HbE, and HbD), followed by subsequent prenatal diagnosis (if required) are available at our centre.
- The mentioned P2 value from BioRad Variant-II HPLC system is equivalent of HbA1c value in BioRad D10 system

Disclaimers:

- The Hb-HPLC is a screening test that detects Beta-thalassemia and other hemoglobin variants. It does not identify Alpha-thalassemia and Silent Beta-thal-assemia carriers. DNA analysis is recommended to rule out Alpha-thalassemia and Silent Beta-thalassemia carriers.
- The result must be interpreted in conjunction with the complete blood counts (CBC), VitB12 and iron profile of the individual.
- Each sample received at Lilac Insights' processing centre is handled with the utmost sensitivity and care. All samples received on Sundays and National holidays are stored as per specific guidelines for the respective specimens and processed on the next day.
- P2 peak in Bio Rad's Variant II HPLC platform represents glycated hemoglobin. It is elevated in uncontrolled diabetes.

Verified by
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 Incharge Biochemistry

Dr. A. Dasgupta MD, PhD,
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