To:	**Panacea Hospital-Yeola** Yeola-Vinchur Road, Maharashtra Nashik - 423401 Contact: **Report Of: Mrs. SHUBHANGI M KAVADE** Pt. Contact:

Sample ID	2300095165
Patient ID	1002354884
Received on	15/07/2023 10:35
Registered on	16/07/2023 18:26
Reported on	17/07/2023 14:57
Referred by	**DR.KAVITA DARADE**

Hemoglobinopathy Screening

Patient Name: Mrs. SHUBHANGI M KAVADE
Sample Type: Whole Blood EDTA
Date of Birth/Age: 14/07/2002
Gender: FEMALE
City: YEOLA
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	2.0*%	<2%
P2*	3.9%	<4.6%
HbA0	82.0% ⚠	85 - 95%
HbA2/HbE	5.8*% ⚠	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

⚠ Indicates that the individual requires further evaluation and opinion from the clinician.

Interpretation

Chromatogram shows elevated HbA2 (5.8%) suggesting the diagnosis of Beta Thalassemia trait.
Hemoglobin and PCV are reduced, RBC count is mnormal and red cell indices are microcytic with high RDW . These findings suggests co-exitant iron deficiency

Suggestions

1) Molecular studies to confirm the above diagnosis.
2) Serum iron studies
3) Hemoglobin analysis of the parents and the partner by HPLC.
In view of ductus venosus 'A' wave reversal observed in the ultrasound, clinical decision should be taken based on correlation of the first trimester screening result with USG findings.

Verified by
Mr. Pradip Kadam
Incharge Biochemistry

Dr. A. Dasgupta MD, PhD,
Consultant Hematopathologist

Patient Name : Mrs. SHUBHANGI M KAVADE | Sample ID : 2300095165

HPLC Findings

*Values outside of expected ranges

Analysis comments:

Patient Data

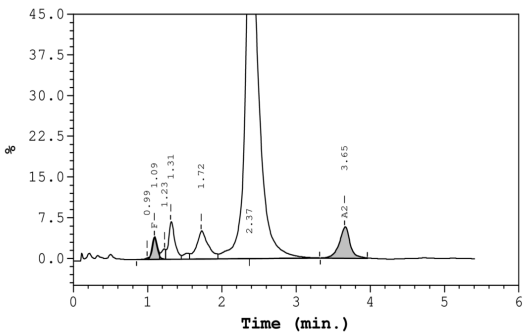
Sample ID: 2300095165
Patient ID:
Name:
Physician:
Sex:
DOB:
Comments:

Analysis Data

Analysis Performed: 07/11/2023 17:46:00
Injection Number: 3671
Run Number: 304
Rack ID: 0010
Tube Number: 4
Report Generated: 07/11/2023 17:59:10
Operator ID:

Peak Name	Calibrated Area %	Area %	Retention Time (min)	Peak Area
Unknown	---	0.1	0.99	1820
F	2.0*	---	1.09	35075
Unknown	---	0.8	1.23	13950
P2	---	3.9	1.31	69335
P3	---	5.5	1.72	98431
Ao	---	82.0	2.37	1468398
A2	5.8*	---	3.65	102685

Total Area: 1,789,693



F Concentration = 2.0* %
A2 Concentration = 5.8* %

Important Blood Indices (from CBC Analysis)

Parameters	Result	Reference Range	Units
Hemoglobin (Hb)	9.85 ⚠	12 - 15	g/dL
RBC Count	4.15	3.8 - 4.8	x 10^6/µL
Hematocrit	29.60 ⚠	36 - 46	%
Mean Corpuscular Volume (MCV)	71.40 ⚠	83 - 101	fL
Mean Corpuscular Hb (MCH)	23.70 ⚠	27 - 32	pg
Mean Corpuscular Hb Conc. (MCHC)	33.30	31.5 - 34.5	g/dL
RBC Distribution Width (RDW) (CV)	19.20 ⚠	11.6 - 14	%
RBC Distribution Width (RDW) (SD)	45.00	39 - 46	fL

Notes:

1. 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.
2. Megaloblastic anemia can cause elevated HbA2 levels. A repeat assay is recommended after correction of VitB12 deficiency.
3. 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.
4. 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.
5. 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.
6. The mentioned P2 value from BioRad Variant-II HPLC system is equivalent of HbA1c value in BioRad D10 system

Disclaimers:

1. 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.
2. The result must be interpreted in conjunction with the complete blood counts (CBC), VitB12 and iron profile of the individual.
3. 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.
4. P2 peak in Bio Rad's Variant II HPLC platform represents glycated hemoglobin. It is elevated in uncontrolled diabetes.

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