

Dr. Vinay Chopra
MD (Pathology & Microbiology)
Chairman & Consultant Pathologist

Dr. Yugam Chopra
MD (Pathology)
CEO & Consultant Pathologist

NAME : Mrs. ANITA
AGE/ GENDER : 37 YRS/FEMALE
COLLECTED BY :
REFERRED BY :
BARCODE NO. : 01513364
CLIENT CODE. : KOS DIAGNOSTIC LAB
CLIENT ADDRESS : 6349/1, NICHOLSON ROAD, AMBALA CANTT

PATIENT ID : 1552790
REG. NO./LAB NO. : 012407180024
REGISTRATION DATE : 18/Jul/2024 10:09 AM
COLLECTION DATE : 18/Jul/2024 10:10AM
REPORTING DATE : 19/Jul/2024 08:27AM

Test Name	Value	Unit	Biological Reference interval
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HAEMATOLOGY

HAEMOGLOBIN - HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HB-HPLC)

HAEMOGLOBIN VARIANTS

HAEMOGLOBIN A0 (ADULT) by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)	84	%	83.00 - 90.00
HAEMOGLOBIN F (FOETAL) by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)	< 0.8	%	0.00 - 2.0
HAEMOGLOBIN A2 by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)	2.8	%	1.50 - 3.70
PEAK 3 by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)	5.4	%	< 10.0
OTHERS-NON SPECIFIC by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)	ABSENT	%	ABSENT
HAEMOGLOBIN S by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)	NOT DETECTED	%	< 0.02
HAEMOGLOBIN D (PUNJAB) by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)	NOT DETECTED	%	< 0.02
HAEMOGLOBIN E by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)	NOT DETECTED	%	< 0.02
HAEMOGLOBIN C by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)	NOT DETECTED	%	< 0.02
UNKNOWN UNIDENTIFIED VARIANTS by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)	NOT DETECTED	%	< 0.02
GLYCOSYLATED HAEMOGLOBIN (HbA1c): WHOLE BLOOD by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)	4.6	%	4.0 - 6.4

RED BLOOD CELLS (RBCS) COUNT AND INDICES

HAEMOGLOBIN (HB) by AUTOMATED HEMATOLOGY ANALYZER	10.5 ^L	gm/dL	12.0 - 16.0
RED BLOOD CELL (RBC) COUNT by AUTOMATED HEMATOLOGY ANALYZER	3.63	Millions/cmm	3.50 - 5.00
PACKED CELL VOLUME (PCV) by AUTOMATED HEMATOLOGY ANALYZER	33 ^L	%	37.0 - 50.0
MEAN CORPUSCULAR VOLUME (MCV)	91	fL	80.0 - 100.0



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by AUTOMATED HEMATOLOGY ANALYZER			
MEAN CORPUSCULAR HAEMOGLOBIN (MCH)	28.9	pg	27.0 - 34.0
by AUTOMATED HEMATOLOGY ANALYZER			
MEAN CORPUSCULAR HEMOGLOBIN CONC. (MCHC)	31.8 ^L	g/dL	32.0 - 36.0
by AUTOMATED HEMATOLOGY ANALYZER			
RED CELL DISTRIBUTION WIDTH (RDW-CV)	13.7	%	11.00 - 16.00
by AUTOMATED HEMATOLOGY ANALYZER			
RED CELL DISTRIBUTION WIDTH (RDW-SD)	46.6	fL	35.0 - 56.0
by AUTOMATED HEMATOLOGY ANALYZER			
OTHERS			
NAKED EYE SINGLE TUBE RED CELL	NEGATIVE (-ve)		NEGATIVE (-ve)
OSMOTIC FRAGILITY TEST			
by SINGLE RED CELL OSMOTIC FRAGILITY			
MENTZERS INDEX	25.07	RATIO	BETA THALASSEMIA TRAIT: < 13.0 IRON DEFICIENCY ANEMIA: >13.0
by CALCULATED			
INTERPRETATION	THE ABOVE FINDINGS ARE SUGGESTIVE OF NORMAL HAEMOGLOBIN CHROMATOGRAPHIC PATTERN		

INTERPRETATION:

The Thalassemia syndromes, considered the most common genetic disorder worldwide, are a heterogenous group of mandelian disorders, all characterized by a lack of/or decreased synthesis of either the alpha-globin chains (alpha thalassemia) or the beta-globin chains (beta thalassemia) of haemoglobin.

HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC):

1.HAEMOGLOBIN VARIANT ANALYSIS, BLOOD- High Performance liquid chromatography (HPLC) is a fast & accurate method for determining the presence and for quatitation of various types of normal haemoglobin and common abnormal hb variants, including but not limited to Hb S, C, E, D and Beta -thalassemia.

2.The diagnosis of these abnormal haemoglobin should be confirmed by DNA analysis.

3.The method use has a limited role in the diagnosis of alpha thalassemia.

4.Slight elevation in haemoglobin A2 may also occur in hyperthyroidism or when there is deficiency of vitamin b12 or folate and this should be istinguished from inherited elevation of HbA2 in Beta- thalassemia trait.

NAKED EYE SINGLE TUBE RED CELL OSMOTIC FRAGILITY TEST (NESTROFT):

1.It is a screening test to distinguish beta thalassemia trait. Also called as Naked Eye Single Tube Red Cell Osmotic Fragility Test.

2.The test showed a sensitivity of 100%, specificity of 85.47%, a positive predictive value of 66% and a negative predictive value of 100%.

3.A high negative predictive value can reasonably rule out beta thalassemia trait cases. So, it should be adopted as a screening test for beta thalassemia trait, as it is not practical or feasible to employ HbA2 in every case of anemia in childhood.

MENTZERS INDEX:

1.The Mentzer index, helpful in differentiating iron deficiency anemia from beta thalassemia. If a CBC indicates microcytic anemia, the Mentzer index is said to be a method of distinguishing between them.

2.If the index is less than 13, thalassemia is said to be more likely. If the result is greater than 13, then iron-deficiency anemia is said to be more likely.




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3.The principle involved is as follows: In iron deficiency, the marrow cannot produce as many RBCs and they are small (microcytic), so the RBC count and the MCV will both be low, and as a result, the index will be greater than 13. Conversely, in thalassemia, which is a disorder of globin synthesis, the number of RBC's produced is normal, but the cells are smaller and more fragile. Therefore, the RBC count is normal, but the MCV is low, so the index will be less than 13.

NOTE: In practice, the Mentzer index is not a reliable indicator and should not, by itself, be used to differentiate. In addition, it would be possible for a patient with a microcytic anemia to have both iron deficiency and thalassemia, in which case the index would only suggest iron deficiency.

*** End Of Report ***




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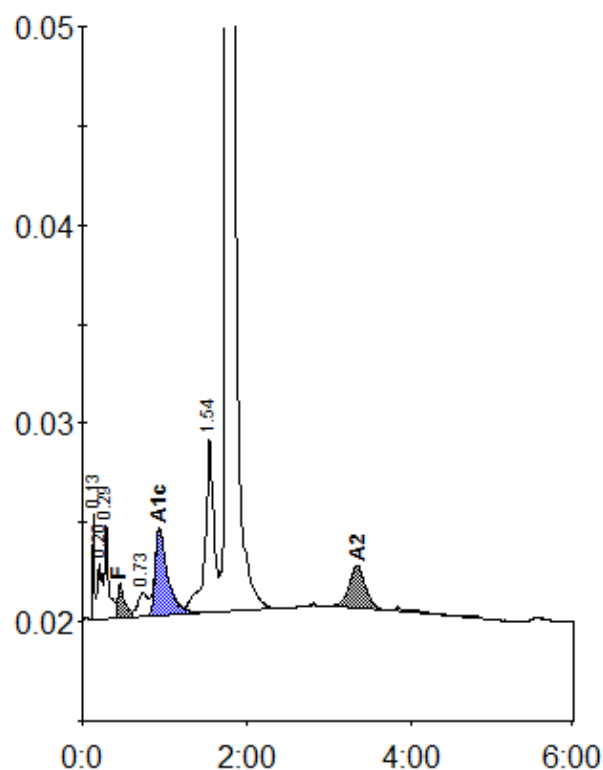

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Patient report

Bio-Rad
D-10
S/N: #DJ6F040603
Sample ID:
Injection date
Injection #: 11
Rack #: ---

DATE: 07/18/2024
TIME: 06:33 PM
Software version: 4.30-2
01513364
07/18/2024 06:07 PM
Method: HbA2/F
Rack position: 1



Peak table - ID: 01513364

Peak	R.time	Height	Area	Area %
Unknown	0.13	5342	7314	0.6
A1a	0.20	2868	12798	1.0
A1b	0.29	4939	15133	1.2
F	0.46	1728	10493	< 0.8 *
LA1c/CHb-1	0.73	1206	10725	0.9
A1c	0.94	4347	46837	4.6
P3	1.54	8765	67257	5.4
A0	1.77	243097	1047265	84.0
A2	3.34	2130	28975	2.8
Total Area:	1246797			

Concentration:	%
F	< 0.8 *
A1c	4.6
A2	2.8