


LABORATORY REPORT


Name : Mr. KUSHAL BAGGA	Sex/Age : Male / 31 Years	Case ID : 40122300446
Ref. By : SELF	Dis. At :	Pt. ID :
Bill. Loc. : NDPL - Mediwheel		Pt. Loc. :
Reg Date and Time : 17-Jan-2024 13:23	Sample Type : Whole Blood EDTA	Mobile No. : 9896297055
Sample Date and Time : 17-Jan-2024 13:23	Sample Coll. By : non	Ref Id1 :
Report Date and Time : 20-Jan-2024 12:59	Acc. Remarks :	Ref Id2 :

TEST	RESULTS	UNIT	BIOLOGICAL REF. INTERVAL	REMARKS
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HAEMOGRAM REPORT
HB AND INDICES

Haemoglobin	L 13.0	gm/dL	13.5 to 18.0
RBC (Electrical Impedance)	H 6.50	millions/cmm	4.7 to 6.0
PCV(Calc)	L 39.5	%	42.0 to 52.0
MCV (RBC histogram)	L 60.7	%	78 to 100
MCH (Calc)	L 18.5	pg	27.0 to 31.0
MCHC (Calc)	L 30.6	gm/dL	32.0 to 36.0
RDW (RBC histogram)	H 15.8	%	11.5 to 14.0

TOTAL AND DIFFERENTIAL WBC COUNT

Total WBC Count	5470	/μL	4,000 to 10,500		
Neutrophil	[%] 64	%	EXPECTED VALUES 40 - 80	[Abs] 3501	EXPECTED VALUES /μL 2000 - 7000
Lymphocyte	L 19	%	20 - 40	1039	/μL 1000-3000
Eosinophil	06	%	1 - 6	328	/μL 20-500
Monocytes	H 11	%	2 - 10	602	/μL 200 - 1000
Basophil	00	%	0.00 - 2.00	0	/μL 00 - 100

PLATELET COUNT

Platelet Count	284000	/μL	150000.00 - 410000.00
MPV	9.2	fL	7.5 to 12.0
PDW	H 17.3		9 - 16

Method:

TLC-SF cube technology(Flow Cytometry+ fluorescence),

DC by microscopy,

Platelet count by electrical impedance+/-SF cube technology

Note:(LL-VeryLow,L-Low,H-High,HH-VeryHigh ,A-Abnormal)

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ESR <i>Westergren Method</i>	04	mm after 1hr	3 - 15	

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URINE EXAMINATION (STRIP METHOD AND FLOWCYTOMETRY)
Physical examination

Colour	Pale yellow		
Transparency	Clear		CLEAR

Chemical Examination By Sysmex UC-3500

Sp.Gravity	1.025		1.003 - 1.035
pH	6.0		4.6 - 8
Leucocytes (ESTERASE)	Negative		Negative
Protein	Negative		Negative
Glucose	Negative		Negative
Ketone Bodies Urine	Negative		Negative
Urobilinogen	Normal		Negative
Bilirubin	Negative		Negative
Blood	Negative		Negative
Nitrite	Negative		Negative

Flowcytometric Examination By Sysmex UF-5000

Leucocyte	1-2	/HPF	Nil
Red Blood Cell	Nil	/HPF	Absent
Epithelial Cell	Nil	/HPF	Present(+)
Bacteria	Nil		ABSENT
Yeast	Nil		ABSENT
Cast	Nil	/LPF	Nil
Crystals	Nil	/HPF	Nil

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Parameter	Unit	Expected value	Result/Notations				
			Trace	+	++	+++	++++
pH	-	4.6-8.0					
SG	-	1.003-1.035					
Protein	mg/dL	Negative (<10)	10	25	75	150	500
Glucose	mg/dL	Negative (<30)	30	50	100	300	1000
Bilirubin	mg/dL	Negative (0.2)	0.2	1	3	6	-
Ketone	mg/dL	Negative (<5)	5	15	50	150	-
Urobilinogen	mg/dL	Negative (<1)	1	4	8	12	-

Parameter	Unit	Expected value	Result/Notifications				
			Trace	+	++	+++	++++
Leukocytes (Strip)	/micro L	Negative (<10)	10	25	100	500	-
Nitrite(Strip)	-	Negative	-	-	-	-	-
Erythrocytes(Strip)	/micro L	Negative (<5)	10	25	50	150	250
Pus cells (Microscopic)	/hpf	<5	-	-	-	-	-
Red blood cells(Microscopic)	/hpf	<2	-	-	-	-	-
Cast (Microscopic)	/lpf	<2	-	-	-	-	-

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TEST	RESULTS	UNIT	BIOLOGICAL REF RANGE	REMARKS
Plasma Glucose - F <i>Photometric, Hexokinase</i>	86	mg/dL	70.0 - 100	

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BIOCHEMICAL INVESTIGATIONS
Lipid Profile

Cholesterol <i>Dry Chemistry</i>	H	222	mg/dL	<200
HDL Cholesterol <i>Dry Chemistry</i>		46	mg/dL	40 - 60
Triglyceride <i>Dry Chemistry</i>		132	mg/dL	40 - 200
VLDL <i>Calculated</i>		26.4	mg/dL	10 - 40
Chol/HDL <i>Calculated</i>	H	4.83		0.00 - 4.10
LDL Cholesterol <i>Calculated</i>	H	149.60	mg/dL	0.00 - 100.00

NEW ATP III GUIDELINES (MAY 2001), MODIFICATION OF NCEP

LDL CHOLESTEROL	CHOLESTEROL	HDL CHOLESTEROL	TRIGLYCERIDES
Optimal <100	Desirable <200	Low <40	Normal <150
Near Optimal 100-129	Border Line 200-239	High >60	Border High 150-199
Borderline 130-159	High >240	-	High 200-499
High 160-189	-	-	-

- LDL Cholesterol level is primary goal for treatment and varies with risk category and assesment
- For LDL Cholesterol level Please consider direct LDL value
Risk assesment from HDL and Triglyceride has been revised. Also LDL goals have changed.
- Detail test interpreation available from the lab
- All tests are done according to NCEP guidelines and with FDA approved kits.
- LDL Cholesterol level is primary goal for treatment and varies with risk category and assesment

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BIOCHEMICAL INVESTIGATIONS				
Liver Function Test				
S.G.P.T. <i>Dry Chemistry</i>	H 80.2	U/L	0 - 50	
S.G.O.T. <i>Dry Chemistry</i>	H 50.5	U/L	15 - 46	
Alkaline Phosphatase <i>Dry Chemistry</i>	108	U/L	38 - 126	
Gamma Glutamyl Transferase <i>Dry Chemistry</i>	50.1	U/L	15 - 73	
Proteins (Total) <i>Dry Chemistry</i>	8.0	gm/dL	6.4 - 8.2	
Albumin <i>Dry Chemistry</i>	4.7	gm/dL	3.5 - 5.0	
Globulin <i>Calculated</i>	3.30	gm/dL	2 - 4.1	
A/G Ratio <i>Calculated</i>	1.42		1.0 - 2.1	
Bilirubin Total <i>Dry Chemistry</i>	0.60	mg/dL	0.2 - 1.3	
Bilirubin Conjugated <i>Diazotization reaction</i>	0.42	mg/dL	0 - 0.50	
Bilirubin Unconjugated <i>Calculated</i>	0.18	mg/dL	0.10 - 1.00	

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TEST	RESULTS	UNIT	BIOLOGICAL REF RANGE	REMARKS
<u>Glycated Haemoglobin Estimation</u>				
HbA1C <i>Immunoturbidimetric</i>	5.3		% of total Hb <5.7: Normal 5.7-6.4: Prediabetes >=6.5: Diabetes	
Estimated Avg Glucose (3 Mths) <i>Calculated</i>	105.41	mg/dL	Not available	

Please Note change in reference range as per ADA 2021 guidelines.

Interpretation :

HbA1C level reflects the mean glucose concentration over previous 8-12 weeks and provides better indication of long term glycemic control.

Levels of HbA1C may be low as result of shortened RBC life span in case of hemolytic anemia.

Increased HbA1C values may be found in patients with polycythemia or post splenectomy patients.

Patients with Homozygous forms of rare variant Hb(CC,SS,EE,SC) HbA1c can not be quantitated as there is no HbA.

In such circumstances glycemic control can be monitored using plasma glucose levels or serum Fructosamine.

The A1c target should be individualized based on numerous factors, such as age, life expectancy, comorbid conditions, duration of diabetes, risk of hypoglycemia or adverse consequences from hypoglycemia, patient motivation and adherence.

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TEST	RESULTS	UNIT	BIOLOGICAL REF RANGE	REMARKS
Thyroid Function Test				
Triiodothyronine (T3)	197.3	ng/dL	80 - 200	
Thyroxine (T4)	8.97	µg/dL	5.1 - 14.1	
TSH	3.17	µIU/mL	0.27 - 4.20	

INTERPRETATIONS

- Circulating TSH measurement has been used for screening for euthyroidism, screening and diagnosis for hyperthyroidism & hypothyroidism. Suppressed TSH (<0.01 µIU/mL) suggests a diagnosis of hyperthyroidism and elevated concentration (>7 µIU/mL) suggest hypothyroidism. TSH levels may be affected by acute illness and several medications including dopamine and glucocorticoids. Decreased (low or undetectable) in Graves disease. Increased in TSH secreting pituitary adenoma (secondary hyperthyroidism), PRTN and in hypothalamic disease thyrotropin (tertiary hyperthyroidism). Elevated in hypothyroidism (along with decreased T4) except for pituitary & hypothalamic disease.
- Mild to modest elevations in patient with normal T3 & T4 levels indicates impaired thyroid hormone reserves & incipient hypothyroidism (subclinical hypothyroidism).
- Mild to modest decrease with normal T3 & T4 indicates subclinical hyperthyroidism.
- Degree of TSH suppression does not reflect the severity of hyperthyroidism, therefore, measurement of free thyroid hormone levels is required in patient with a suppressed TSH level.

CAUTIONS

Sick, hospitalized patients may have falsely low or transiently elevated thyroid stimulating hormone. Some patients who have been exposed to animal antigens, either in the environment or as part of treatment or imaging procedure, may have circulating antianimal antibodies present. These antibodies may interfere with the assay reagents to produce unreliable results.

TSH ref range in pregnancy

First trimester
Second trimester
Third trimester

Reference range (microIU/ml)

0.24 - 2.00
0.43-2.2
0.8-2.5

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Interpretation Note:

Ultra sensitive-thyroid-stimulating hormone (TSH) is a highly effective screening assay for thyroid disorders. In patients with an intact pituitary-thyroid axis, s-TSH provides a physiologic indicator of the functional level of thyroid hormone activity. Increased s-TSH indicates inadequate thyroid hormone, and suppressed s-TSH indicates excess thyroid hormone. Transient s-TSH abnormalities may be found in seriously ill, hospitalized patients, so this is not the ideal setting to assess thyroid function. However, even in these patients, s-TSH works better than total thyroxine (an alternative screening test). When the s-TSH result is abnormal, appropriate follow-up tests T4 & free T3 levels should be performed. If TSH is between 5.0 to 10.0 & free T4 & free T3 level are normal then it is considered as subclinical hypothyroidism which should be followed up after 4 weeks & If TSH is > 10 & free T4 & free T3 level are normal then it is considered as overt hypothyroidism.

Serum triiodothyronine (T3) levels often are depressed in sick and hospitalized patients, caused in part by the biochemical shift to the production of reverse T3. Therefore, T3 generally is not a reliable predictor of hypothyroidism. However, in a small subset of hyperthyroid patients, hyperthyroidism may be caused by overproduction of T3 (T3 toxicosis). To help diagnose and monitor this subgroup, T3 is measured on all specimens with suppressed s-TSH and normal FT4 concentrations.

Normal ranges of TSH & thyroid hormones vary according trimester in pregnancy.

TSH ref range in Pregnancy	Reference range (microIU/ml)
First trimester	0.24 - 2.00
Second trimester	0.43-2.2
Third trimester	0.8-2.5

	T3	T4	TSH
Normal Thyroid function	N	N	N
Primary Hyperthyroidism	↑	↑	↓
Secondary Hyperthyroidism	↑	↑	↑
Grave's Thyroiditis	↑	↑	↑
T3 Thyrotoxicosis	↑	N	N/↓
Primary Hypothyroidism	↓	↓	↑
Secondary Hypothyroidism	↓	↓	↓
Subclinical Hypothyroidism	N	N	↑
Patient on treatment	N	N/↑	↓

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Proteins (Total) <i>Dry Chemistry</i>	8.0	gm/dL	6.4 - 8.2	
Alkaline Phosphatase <i>Dry Chemistry</i>	108	U/L	38 - 126	
Creatinine	0.68	mg/dL	0.60 - 1.40	
Calcium <i>Dry Chemistry</i>	9.4	mg/dL	8.0 - 10.1	
Chloride <i>ISE</i>	103	mmol/L	98 - 107	
Phosphorus Inorganic <i>Dry Chemistry</i>	3.7	mg/dL	2.5 - 4.5	
Potassium <i>ISE</i>	4.1	mmol/L	3.5 - 5.1	
Sodium <i>ISE</i>	142	mmol/L	136 - 145	
Urea <i>Dry Chemistry</i>	19.9	mg/dL	19 - 43	
Uric Acid <i>Dry Chemistry</i>	5.7	mg/dL	3.5 - 8.5	
Albumin <i>Dry Chemistry</i>	4.7	gm/dL	3.5 - 5.0	

----- End Of Report -----

For test performed on specimens received or collected from non-NSRL locations, it is presumed that the specimen belongs to the patient named or identified as labeled on the container/test request and such verification has been carried out at the point generation of the said specimen by the sender. NSRL will be responsible Only for the analytical part of test carried out. All other responsibility will be of referring Laboratory.

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