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| | | | |
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| **NAME** | **: Mrs. TAMANA** | | |
| **AGE/ GENDER** | : 25 YRS/FEMALE | **PATIENT ID** | : 1612611 |
| **COLLECTED BY** | : | **REG. NO./LAB NO.** | **: 012409130065** |
| **REFERRED BY** | : C. LAL HOSPITAL (AMBALA CANTT) | **REGISTRATION DATE** | : 13/Sep/2024 10:51 PM |
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| **CLIENT ADDRESS** | : 6349/1, NICHOLSON ROAD, AMBALA CANTT | | |

# HAEMATOLOGY

## COMPLETE BLOOD COUNT (CBC)

| Test Name | Value | Unit | Biological Reference interval |
|---|---|---|---|
| **RED BLOOD CELLS (RBCS) COUNT AND INDICES** | | | |
| HAEMOGLOBIN (HB)<br>*by CALORIMETRIC* | 12.4 | gm/dL | 12.0 - 16.0 |
| RED BLOOD CELL (RBC) COUNT<br>*by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | 4.15 | Millions/cmm | 3.50 - 5.00 |
| PACKED CELL VOLUME (PCV)<br>*by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER* | 37.7 | % | 37.0 - 50.0 |
| MEAN CORPUSCULAR VOLUME (MCV)<br>*by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER* | 90.8 | fL | 80.0 - 100.0 |
| MEAN CORPUSCULAR HAEMOGLOBIN (MCH)<br>*by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER* | 29.9 | pg | 27.0 - 34.0 |
| MEAN CORPUSCULAR HEMOGLOBIN CONC. (MCHC)<br>*by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER* | **32.9$^{L}$** | g/dL | 32.0 - 36.0 |
| RED CELL DISTRIBUTION WIDTH (RDW-CV)<br>*by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER* | 13.6 | % | 11.00 - 16.00 |
| RED CELL DISTRIBUTION WIDTH (RDW-SD)<br>*by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER* | 45.9 | fL | 35.0 - 56.0 |
| MENTZERS INDEX<br>*by CALCULATED* | 21.88 | RATIO | BETA THALASSEMIA TRAIT: < 13.0<br>IRON DEFICIENCY ANEMIA: >13.0 |
| GREEN & KING INDEX<br>*by CALCULATED* | 29.78 | RATIO | BETA THALASSEMIA TRAIT:<= 65.0<br>IRON DEFICIENCY ANEMIA: > 65.0 |
| **WHITE BLOOD CELLS (WBCS)** | | | |
| **TOTAL LEUCOCYTE COUNT (TLC)**<br>***by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*** | **22930$^{H}$** | **/cmm** | **4000 - 11000** |
| NUCLEATED RED BLOOD CELLS (nRBCS)<br>*by AUTOMATED 6 PART HEMATOLOGY ANALYZER* | NIL | | 0.00 - 20.00 |
| NUCLEATED RED BLOOD CELLS (nRBCS) %<br>*by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER* | NIL | % | < 10 % |
| **DIFFERENTIAL LEUCOCYTE COUNT (DLC)** | | | |
| **NEUTROPHILS**<br>***by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*** | **75$^{H}$** | **%** | **50 - 70** |

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| Test Name | Value | Unit | Biological Reference interval |
|---|---|---|---|
| **LYMPHOCYTES** *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | **17$^{L}$** | **%** | **20 - 40** |
| EOSINOPHILS *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | 1 | % | 1 - 6 |
| MONOCYTES *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | 7 | % | 2 - 12 |
| BASOPHILS *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | 0 | % | 0 - 1 |
| **ABSOLUTE LEUKOCYTES (WBC) COUNT** | | | |
| **ABSOLUTE NEUTROPHIL COUNT** *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | **17198$^{H}$** | **/cmm** | **2000 - 7500** |
| ABSOLUTE LYMPHOCYTE COUNT *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | 3898 | /cmm | 800 - 4900 |
| ABSOLUTE EOSINOPHIL COUNT *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | 229 | /cmm | 40 - 440 |
| **ABSOLUTE MONOCYTE COUNT** *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | **1605$^{H}$** | **/cmm** | **80 - 880** |
| ABSOLUTE BASOPHIL COUNT *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | 0 | /cmm | 0 - 110 |
| **PLATELETS AND OTHER PLATELET PREDICTIVE MARKERS.** | | | |
| PLATELET COUNT (PLT) *by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | 340000 | /cmm | 150000 - 450000 |
| **PLATELETCRIT (PCT)** *by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | **0.41$^{H}$** | **%** | **0.10 - 0.36** |
| MEAN PLATELET VOLUME (MPV) *by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | 12 | fL | 6.50 - 12.0 |
| **PLATELET LARGE CELL COUNT (P-LCC)** *by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | **137000$^{H}$** | **/cmm** | **30000 - 90000** |
| PLATELET LARGE CELL RATIO (P-LCR) *by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | 40.4 | % | 11.0 - 45.0 |
| PLATELET DISTRIBUTION WIDTH (PDW) *by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | 16.4 | % | 15.0 - 17.0 |
| **ADVICE** | **KINDLY CORRELATE CLINICALLY** | | |

NOTE: TEST CONDUCTED ON EDTA WHOLE BLOOD

RECHECKED

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| Test Name | Value | Unit | Biological Reference interval |
|---|---|---|---|

## CLINICAL CHEMISTRY/BIOCHEMISTRY

### LIVER FUNCTION TEST (COMPLETE)

| | | | |
|---|---|---|---|
| BILIRUBIN TOTAL: SERUM<br>*by DIAZOTIZATION, SPECTROPHOTOMETRY* | 0.47 | mg/dL | INFANT: 0.20 - 8.00<br>ADULT: 0.00 - 1.20 |
| BILIRUBIN DIRECT (CONJUGATED): SERUM<br>*by DIAZO MODIFIED, SPECTROPHOTOMETRY* | 0.14 | mg/dL | 0.00 - 0.40 |
| BILIRUBIN INDIRECT (UNCONJUGATED): SERUM<br>*by CALCULATED, SPECTROPHOTOMETRY* | 0.33 | mg/dL | 0.10 - 1.00 |
| SGOT/AST: SERUM<br>*by IFCC, WITHOUT PYRIDOXAL PHOSPHATE* | 18.9 | U/L | 7.00 - 45.00 |
| SGPT/ALT: SERUM<br>*by IFCC, WITHOUT PYRIDOXAL PHOSPHATE* | 23.9 | U/L | 0.00 - 49.00 |
| AST/ALT RATIO: SERUM<br>*by CALCULATED, SPECTROPHOTOMETRY* | 0.79 | RATIO | 0.00 - 46.00 |
| **ALKALINE PHOSPHATASE: SERUM**<br>***by PARA NITROPHENYL PHOSPHATASE BY AMINO METHYL PROPANOL*** | **217.24$^{H}$** | **U/L** | **40.0 - 130.0** |
| GAMMA GLUTAMYL TRANSFERASE (GGT): SERUM<br>*by SZASZ, SPECTROPHTOMETRY* | 36.71 | U/L | 0.00 - 55.0 |
| TOTAL PROTEINS: SERUM<br>*by BIURET, SPECTROPHOTOMETRY* | 6.62 | gm/dL | 6.20 - 8.00 |
| ALBUMIN: SERUM<br>*by BROMOCRESOL GREEN* | 3.77 | gm/dL | 3.50 - 5.50 |
| GLOBULIN: SERUM<br>*by CALCULATED, SPECTROPHOTOMETRY* | 2.85 | gm/dL | 2.30 - 3.50 |
| A : G RATIO: SERUM<br>*by CALCULATED, SPECTROPHOTOMETRY* | 1.32 | RATIO | 1.00 - 2.00 |

***INTERPRETATION***

***NOTE***:- **To be correlated in individuals having SGOT and SGPT values higher than Normal Referance Range.**

**USE**:- Differential diagnosis of diseases of hepatobiliary system and pancreas.

**INCREASED:**

| | |
|---|---|
| DRUG HEPATOTOXICITY | > 2 |
| ALCOHOLIC HEPATITIS | > 2 (Highly Suggestive) |
| CIRRHOSIS | 1.4 - 2.0 |

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| Test Name | Value | Unit | Biological Reference interval |
|---|---|---|---|
| INTRAHEPATIC CHOLESTATIS | > 1.5 | | |
| HEPATOCELLULAR CARCINOMA & CHRONIC HEPATITIS | > 1.3 (Slightly Increased) | | |

**DECREASED:**

1. Acute Hepatitis due to virus, drugs, toxins (with AST increased 3 to 10 times upper limit of normal)
2. Extra Hepatic cholestatis: 0.8 (normal or slightly decreased).

**PROGNOSTIC SIGNIFICANCE:**

| | |
|---|---|
| NORMAL | < 0.65 |
| GOOD PROGNOSTIC SIGN | 0.3 - 0.6 |
| POOR PROGNOSTIC SIGN | 1.2 - 1.6 |

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| Test Name | Value | Unit | Biological Reference interval |
|---|---|---|---|

## IMMUNOPATHOLOGY/SEROLOGY

### HEPATITIS B SURFACE ANTIGEN (HBsAg) SCREENING

| | | | |
|---|---|---|---|
| HEPATITIS B SURFACE ANTIGEN (HBsAg) RESULT<br>*by IMMUNOCHROMATOGRAPHY* | NON REACTIVE | | |

***INTERPRETATION:-***

1.HBsAG is the first serological marker of HBV infection to appear in the blood (approximately 30-60 days after infection and prior to the onset of clinical disease). It is also the last viral protein to disappear from blood and usually disappears by three months after infection in self limiting acute Hepatitis B viral infection.

2.Persistence of HBsAg in blood for more than six months implies chronic infection. It is the most common marker used for diagnosis of an acute Hepatitis B infection but has very limited role in assessing patients suffering from chronic hepatitis.

**FALSE NEGATIVE RESULT SEEN IN:**

1.Window period.

2.Infection with HBsAg mutant strains

3.Hepatitis B Surface antigen (HBsAg) is the earliest indicator of HBV infection. Usually it appears in 27 - 41 days (as early as 14 days).

4.Appears 7 - 26 days before biochemical abnormalities. Peaks as ALT rises. Persists during the acute illness. Usually disappears 12- 20 weeks after the onset of symptoms / laboratory abnormalities in 90% of cases.

5.Is the most reliable serologic marker of HBV infection. Persistence > 6 months defines carrier state. May also be found in chronic infection.Hepatitis B vaccination does not cause a positive HBsAg. Titers are not of clinical value.

**NOTE:-**

1.All reactive HBsAG Should be reconfirmed with neutralization test(HBsAg confirmatory test).

2.Anti - HAV IgM appears at the same time as symptoms in > 99% of cases, peaks within the first month, becomes nondetectable in 12 months (usually 6 months). Presence confirms diagnosis of recent acute infection.

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| Test Name | Value | Unit | Biological Reference interval |
|---|---|---|---|

## VDRL

| | | | |
|---|---|---|---|
| VDRL<br>*by IMMUNOCHROMATOGRAPHY* | NON REACTIVE | | NON REACTIVE |

***INTERPRETATION:***

1.Does not become positive until 7 - 10 days after appearance ofchancre.
2.***High titer (>1:16) - active disease.***
3.***Low titer (<1:8) - biological falsepositive test in 90% cases or due to late or late latent syphillis.***
4.Treatment of primary syphillis causes progressive decline tonegative VDRL within 2 years.
5.Rising titer (4X) indicates relapse,reinfection, or treatment failure and need for retreatment.
6.May benonreactive in early primary, late latent, and late syphillis (approx. 25% ofcases).
***7.Reactive and weakly reactive tests should always be confirmedwith FTA-ABS (fluorescent treponemal antibody absorptiontest).***

**SHORTTERM FALSE POSITIVE TEST RESULTS (<6 MONTHS DURATION) MAY OCCURIN:**

1.Acute viral illnesses (e.g., hepatitis, measles, infectious mononucleosis)
2.M. pneumoniae; Chlamydia; Malaria infection.
3.Some immunizations
4.Pregnancy (rare)

**LONGTERM FALSE POSITIVE TEST RESULTS (>6 MONTHS DURATION) MAY OCCUR IN:**

1.Serious underlying disease e.g., collagen vascular diseases, leprosy ,malignancy.
2.Intravenous drug users.
3.Rheumatoid arthritis, thyroiditis, AIDS, Sjogren's syndrome.
4.<l0 % of patients older thanage 70 years.
5.Patients taking some anti-hypertensive drugs.

*** End Of Report ***

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