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| | | | |
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| **NAME** | **: Baby. SANVI** | | |
| **AGE/ GENDER** | : 3 YRS/FEMALE | **PATIENT ID** | : 1670624 |
| **COLLECTED BY** | : | **REG. NO./LAB NO.** | **: 012411130033** |
| **REFERRED BY** | : DR BHAVYA GUPTA | **REGISTRATION DATE** | : 13/Nov/2024 11:09 AM |
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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* | **11**$^{L}$ | gm/dL | 12.0 - 16.0 |
| RED BLOOD CELL (RBC) COUNT<br>*by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | 4.4 | Millions/cmm | 3.50 - 5.50 |
| PACKED CELL VOLUME (PCV)<br>*by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER* | **34.7**$^{L}$ | % | 35.0 - 49.0 |
| MEAN CORPUSCULAR VOLUME (MCV)<br>*by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER* | **79**$^{L}$ | fL | 80.0 - 100.0 |
| MEAN CORPUSCULAR HAEMOGLOBIN (MCH)<br>*by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER* | **25**$^{L}$ | pg | 27.0 - 34.0 |
| MEAN CORPUSCULAR HEMOGLOBIN CONC. (MCHC)<br>*by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER* | **31.6**$^{L}$ | g/dL | 32.0 - 36.0 |
| RED CELL DISTRIBUTION WIDTH (RDW-CV)<br>*by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER* | 13.2 | % | 11.00 - 16.00 |
| RED CELL DISTRIBUTION WIDTH (RDW-SD)<br>*by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER* | 38.9 | fL | 35.0 - 56.0 |
| MENTZERS INDEX<br>*by CALCULATED* | 17.95 | RATIO | BETA THALASSEMIA TRAIT: < 13.0<br>IRON DEFICIENCY ANEMIA: >13.0 |
| GREEN & KING INDEX<br>*by CALCULATED* | 23.7 | 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* | 6010 | /cmm | 5000 - 15000 |
| 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 % |

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| Test Name | Value | Unit | Biological Reference interval |
|---|---|---|---|
| **DIFFERENTIAL LEUCOCYTE COUNT (DLC)** | | | |
| NEUTROPHILS<br>*by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | **23$^{L}$** | % | 50 - 70 |
| LYMPHOCYTES<br>*by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | **64$^{H}$** | % | 20 - 45 |
| EOSINOPHILS<br>*by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | **0$^{L}$** | % | 1 - 6 |
| MONOCYTES<br>*by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | **13$^{H}$** | % | 3 - 12 |
| BASOPHILS<br>*by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | 0 | % | 0 - 1 |
| **ABSOLUTE LEUKOCYTES (WBC) COUNT** | | | |
| ABSOLUTE NEUTROPHIL COUNT<br>*by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | **1382$^{L}$** | /cmm | 2000 - 7500 |
| ABSOLUTE LYMPHOCYTE COUNT<br>*by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | 3846 | /cmm | 800 - 4900 |
| ABSOLUTE EOSINOPHIL COUNT<br>*by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | **0$^{L}$** | /cmm | 40 - 440 |
| ABSOLUTE MONOCYTE COUNT<br>*by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | 781 | /cmm | 80 - 880 |
| ABSOLUTE BASOPHIL COUNT<br>*by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY* | 0 | /cmm | 0 - 110 |
| **PLATELETS AND OTHER PLATELET PREDICTIVE MARKERS.** | | | |
| PLATELET COUNT (PLT)<br>*by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | 325000 | /cmm | 150000 - 450000 |
| PLATELETCRIT (PCT)<br>*by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | 0.25 | % | 0.10 - 0.36 |
| MEAN PLATELET VOLUME (MPV)<br>*by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | 8 | fL | 6.50 - 12.0 |
| PLATELET LARGE CELL COUNT (P-LCC)<br>*by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | 33000 | /cmm | 30000 - 90000 |
| PLATELET LARGE CELL RATIO (P-LCR)<br>*by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | **10$^{L}$** | % | 11.0 - 45.0 |
| PLATELET DISTRIBUTION WIDTH (PDW)<br>*by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE* | 15.5 | % | 15.0 - 17.0 |

NOTE: TEST CONDUCTED ON EDTA WHOLE BLOOD

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| Test Name | Value | Unit | Biological Reference interval |
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## CLINICAL CHEMISTRY/BIOCHEMISTRY

### LIVER FUNCTION TEST (COMPLETE)

| Test Name | Value | Unit | Biological Reference interval |
|---|---|---|---|
| BILIRUBIN TOTAL: SERUM<br>*by DIAZOTIZATION, SPECTROPHOTOMETRY* | 0.17 | mg/dL | INFANT: 0.20 - 8.00<br>ADULT: 0.00 - 1.20 |
| BILIRUBIN DIRECT (CONJUGATED): SERUM<br>*by DIAZO MODIFIED, SPECTROPHOTOMETRY* | 0.05 | mg/dL | 0.00 - 0.40 |
| BILIRUBIN INDIRECT (UNCONJUGATED): SERUM<br>*by CALCULATED, SPECTROPHOTOMETRY* | 0.12 | mg/dL | 0.10 - 1.00 |
| SGOT/AST: SERUM<br>*by IFCC, WITHOUT PYRIDOXAL PHOSPHATE* | 37.5 | U/L | 7.00 - 45.00 |
| SGPT/ALT: SERUM<br>*by IFCC, WITHOUT PYRIDOXAL PHOSPHATE* | 14.3 | U/L | 0.00 - 49.00 |
| AST/ALT RATIO: SERUM<br>*by CALCULATED, SPECTROPHOTOMETRY* | 2.62 | RATIO | 0.00 - 46.00 |
| ALKALINE PHOSPHATASE: SERUM<br>*by PARA NITROPHENYL PHOSPHATASE BY AMINO METHYL PROPANOL* | 152.84 | U/L | 50.00 - 370.00 |
| GAMMA GLUTAMYL TRANSFERASE (GGT): SERUM<br>*by SZASZ, SPECTROPHTOMETRY* | 9.5 | U/L | 0.00 - 55.0 |
| TOTAL PROTEINS: SERUM<br>*by BIURET, SPECTROPHOTOMETRY* | 6.4 | gm/dL | 6.20 - 8.00 |
| ALBUMIN: SERUM<br>*by BROMOCRESOL GREEN* | 3.56 | gm/dL | 3.50 - 5.50 |
| GLOBULIN: SERUM<br>*by CALCULATED, SPECTROPHOTOMETRY* | 2.84 | gm/dL | 2.30 - 3.50 |
| A : G RATIO: SERUM<br>*by CALCULATED, SPECTROPHOTOMETRY* | 1.25 | 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 |
| INTRAHEPATIC CHOLESTATIS | > 1.5 |

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

### C-REACTIVE PROTEIN (CRP)

| | | | |
|---|---|---|---|
| C-REACTIVE PROTEIN (CRP) QUANTITATIVE: SERUM<br>*by NEPHLOMETRY* | 1.72 | mg/L | 0.0 - 6.0 |

***INTERPRETATION:***

1. C-reactive protein (CRP) is one of the most sensitive acute-phase reactants for inflammation.
2. CRP levels can increase dramatically (100-fold or more) after severe trauma, bacterial infection, inflammation, surgery, or neoplastic proliferation.
3. CRP levels (Quantitative) has been used to assess activity of inflammatory disease, to detect infections after surgery, to detect transplant rejection, and to monitor these inflammatory processes.
4. As compared to ESR, CRP shows an earlier rise in inflammatory disorders which begins in 4-6 hrs, the intensity of the rise being higher than ESR and the recovery being earlier than ESR. Unlike ESR, CRP levels are not influenced by hematologic conditions like Anemia, Polycythemia etc.,
5. Elevated values are consistent with an acute inflammatory process.

**NOTE:**

1. Elevated C-reactive protein (CRP) values are nonspecific and should not be interpreted without a complete clinical history.
2. Oral contraceptives may increase CRP levels.

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## DENGUE FEVER ANTIGEN NS1 - ELISA (QUANTITATIVE)

| Test Name | Value | Unit | Biological Reference interval |
|---|---|---|---|
| DENGUE NS1 ANTIGEN QUANTITATIVE<br>*by ELISA (ENZYME LINKED IMMUNOSORBENT ASSAY)* | 0.69 | INDEX | NEGATIVE: < 0.90<br>BORDERLINE: 0.90 - 1.10<br>POSITIVE: >=1.10 |
| DENGUE NS1 ANTIGEN RESULT<br>*by ELISA (ENZYME LINKED IMMUNOSORBENT ASSAY)* | NEGATIVE (-ve) | | NEGATIVE (-ve) |

***INTERPRETATION***

| DENGUE ANTIGEN NS1 | | |
|---|---|---|
| **VALUE** | **UNIT** | **RESULT** |
| < 0.90 | INDEX | NEGATIVE (-ve) |
| 0.90 - 1.10 | INDEX | BORDERLINE |
| >=1.10 | INDEX | POSITIVE (+ve) |

1.The test becomes positive within 0-9 days of exposure to the virus (positive results are obtained within 24 hours of exposure in the overwhelming majority of patients) and generally remains positive till 15 days after exposure. The Dengue NS-1 antigen test is extremely useful in the early diagnosis of the disease thus helping in proper follow up and monitoring of the patients.
2.The IgM antibodies on the other hand take a minimum of 5-10 days in primary infection and 4-5 days in secondary infections to test positive and hence are suitable for the diagnosis of dengue fever only when the fever is approximately one week old.

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## WIDAL SLIDE AGGLUTINATION TEST

| Test Name | Value | Unit | Biological Reference interval |
|---|---|---|---|
| SALMONELLA TYPHI O<br>*by SLIDE AGGLUTINATION* | 1 : 40 | TITRE | 1 : 80 |
| SALMONELLA TYPHI H<br>*by SLIDE AGGLUTINATION* | NIL | TITRE | 1 : 160 |
| SALMONELLA PARATYPHI AH<br>*by SLIDE AGGLUTINATION* | NIL | TITRE | 1 : 160 |
| SALMONELLA PARATYPHI BH<br>*by SLIDE AGGLUTINATION* | NIL | TITRE | 1 : 160 |

***INTERPRETATION:***

*1.Titres of 1:80 or more for "O" agglutinin is considered significant.*
*2.Titres of 1:160 or more for "H" agglutinin is considered significant.*

**LIMITATIONS:**

1.Agglutinins usually appear by 5th to 6th day of illness of enteric fever, hence a negative result in early stage is inconclusive.The titre then rises till 3rd or 4th week, after which it declines gradually.
2.Lower titres may be found in normal individuals.
3.A single positive result has less significance than the rising agglutination titre, since demonstration of rising titre four or more in 1st and 3rd week is considered as a definite evidence of infection.
4.A simultaneous rise in H agglutinins is suggestive of paratyphoid infection.

**NOTE:**

*1.Individuals with prior infection or immunization with TAB vaccine may develop an ANAMNESTIC RESPONSE (False-Positive) during an unrelated fever i.e High titres of antibodies to various antigens.This may be differentiated by repitition of the test after a week.*
*2.The anamnestic response shows only a transient rise, while in enteric fever rise is sustained.*
*3.H agglutinins tend to persist for many months after vaccination but O agglutinins tend to disappear sooner i.e within 6 months.Therefore rise in Oagglutinins indicate recent infection.*

*** End Of Report ***

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