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NAME : Mrs. PUSHPA RANI  
AGE/ GENDER : 48 YRS/FEMALE  
COLLECTED BY :  
REFERRED BY :  
BARCODE NO. : 01512940  
CLIENT CODE. : KOS DIAGNOSTIC LAB  
CLIENT ADDRESS : 6349/1, NICHOLSON ROAD, AMBALA CANTT

PATIENT ID : 1545596  
REG. NO./LAB NO. : 012407110044  
REGISTRATION DATE : 11/Jul/2024 01:04 PM  
COLLECTION DATE : 11/Jul/2024 01:06 PM  
REPORTING DATE : 11/Jul/2024 01:38 PM

Test Name	Value	Unit	Biological Reference interval
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## HAEMATOLOGY

### COMPLETE BLOOD COUNT (CBC)

#### RED BLOOD CELLS (RBCS) COUNT AND INDICES


HAEMOGLOBIN (HB) by CALORIMETRIC	10.1 <sup>L</sup>	gm/dL	12.0 - 16.0
RED BLOOD CELL (RBC) COUNT by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE	4.18	Millions/cmm	3.50 - 5.00
PACKED CELL VOLUME (PCV) by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER	32.7 <sup>L</sup>	%	37.0 - 50.0
MEAN CORPUSCULAR VOLUME (MCV) by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER	78.1 <sup>L</sup>	fL	80.0 - 100.0
MEAN CORPUSCULAR HAEMOGLOBIN (MCH) by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER	24 <sup>L</sup>	pg	27.0 - 34.0
MEAN CORPUSCULAR HEMOGLOBIN CONC. (MCHC) by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER	30.8 <sup>L</sup>	g/dL	32.0 - 36.0
RED CELL DISTRIBUTION WIDTH (RDW-CV) by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER	16.3 <sup>H</sup>	%	11.00 - 16.00
RED CELL DISTRIBUTION WIDTH (RDW-SD) by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER	47.5	fL	35.0 - 56.0
MENTZERS INDEX by CALCULATED	18.68	RATIO	BETA THALASSEMIA TRAIT: < 13.0 IRON DEFICIENCY ANEMIA: >13.0
GREEN & KING INDEX by CALCULATED	30.25	RATIO	BETA THALASSEMIA TRAIT: < = 65.0 IRON DEFICIENCY ANEMIA: > 65.0


#### WHITE BLOOD CELLS (WBCS)

TOTAL LEUCOCYTE COUNT (TLC) by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY	8400	/cmm	4000 - 11000
NUCLEATED RED BLOOD CELLS (nRBCS) by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER & MICROSCOPY	NIL		0.00 - 20.00
NUCLEATED RED BLOOD CELLS (nRBCS) % by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER & MICROSCOPY	NIL	%	< 10 %

#### DIFFERENTIAL LEUCOCYTE COUNT (DLC)



  
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<b>NEUTROPHILS</b> <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	75 <sup>H</sup>	%	50 - 70
<b>LYMPHOCYTES</b> <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	16 <sup>L</sup>	%	20 - 40
<b>EOSINOPHILS</b> <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	3	%	1 - 6
<b>MONOCYTES</b> <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	6	%	2 - 12
<b>BASOPHILS</b> <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	0	%	0 - 1
<b><u>ABSOLUTE LEUKOCYTES (WBC) COUNT</u></b>			
<b>ABSOLUTE NEUTROPHIL COUNT</b> <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	6300	/cmm	2000 - 7500
<b>ABSOLUTE LYMPHOCYTE COUNT</b> <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	1344	/cmm	800 - 4900
<b>ABSOLUTE EOSINOPHIL COUNT</b> <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	252	/cmm	40 - 440
<b>ABSOLUTE MONOCYTE COUNT</b> <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	504	/cmm	80 - 880
<b>ABSOLUTE BASOPHIL COUNT</b> <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	0	/cmm	0 - 110
<b><u>PLATELETS AND OTHER PLATELET PREDICTIVE MARKERS.</u></b>			
<b>PLATELET COUNT (PLT)</b> <i>by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE</i>	374000	/cmm	150000 - 450000
<b>PLATELETCRIT (PCT)</b> <i>by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE</i>	0.44 <sup>H</sup>	%	0.10 - 0.36
<b>MEAN PLATELET VOLUME (MPV)</b> <i>by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE</i>	12	fL	6.50 - 12.0
<b>PLATELET LARGE CELL COUNT (P-LCC)</b> <i>by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE</i>	145000 <sup>H</sup>	/cmm	30000 - 90000
<b>PLATELET LARGE CELL RATIO (P-LCR)</b> <i>by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE</i>	38.8	%	11.0 - 45.0
<b>PLATELET DISTRIBUTION WIDTH (PDW)</b> <i>by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE</i>	16.1	%	15.0 - 17.0
NOTE: TEST CONDUCTED ON EDTA WHOLE BLOOD			



  
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### ERYTHROCYTE SEDIMENTATION RATE (ESR)

ERYTHROCYTE SEDIMENTATION RATE (ESR)	87 <sup>H</sup>	mm/1st hr	0 - 20
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by MODIFIED WESTERGREN AUTOMATED METHOD

#### INTERPRETATION:

1. ESR is a non-specific test because an elevated result often indicates the presence of inflammation associated with infection, cancer and autoimmune disease, but does not tell the health practitioner exactly where the inflammation is in the body or what is causing it.
2. An ESR can be affected by other conditions besides inflammation. For this reason, the ESR is typically used in conjunction with other test such as C-reactive protein
3. This test may also be used to monitor disease activity and response to therapy in both of the above diseases as well as some others, such as systemic lupus erythematosus

#### CONDITION WITH LOW ESR

A low ESR can be seen with conditions that inhibit the normal sedimentation of red blood cells, such as a high red blood cell count (polycythaemia), significantly high white blood cell count (leucocytosis), and some protein abnormalities. Some changes in red cell shape (such as sickle cells in sickle cell anaemia) also lower the ESR.

#### NOTE:

1. ESR and C - reactive protein (C-RP) are both markers of inflammation.
2. Generally, ESR does not change as rapidly as does CRP, either at the start of inflammation or as it resolves.
3. **CRP is not affected by as many other factors as is ESR, making it a better marker of inflammation.**
4. If the ESR is elevated, it is typically a result of two types of proteins, globulins or fibrinogen.
5. Women tend to have a higher ESR, and menstruation and pregnancy can cause temporary elevations.
6. Drugs such as dextran, methyldopa, oral contraceptives, penicillamine procainamide, theophylline, and vitamin A can increase ESR, while aspirin, cortisone, and quinine may decrease it



  
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**PERIPHERAL BLOOD SMEAR FOR MALARIA**

PERIPHERAL BLOOD SMEAR  
 FOR MALARIAL PARASITE (MP)  
 by MICROSCOPY

NO MALARIA PARASITE (MP) SEEN IN SMEAR EXAMINED



  
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### CLINICAL CHEMISTRY/BIOCHEMISTRY

#### LIVER FUNCTION TEST (COMPLETE)

BILIRUBIN TOTAL: SERUM <i>by DIAZOTIZATION, SPECTROPHOTOMETRY</i>	0.54	mg/dL	INFANT: 0.20 - 8.00 ADULT: 0.00 - 1.20
BILIRUBIN DIRECT (CONJUGATED): SERUM <i>by DIAZO MODIFIED, SPECTROPHOTOMETRY</i>	0.17	mg/dL	0.00 - 0.40
BILIRUBIN INDIRECT (UNCONJUGATED): SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	0.37	mg/dL	0.10 - 1.00
SGOT/AST: SERUM <i>by IFCC, WITHOUT PYRIDOXAL PHOSPHATE</i>	15.5	U/L	7.00 - 45.00
SGPT/ALT: SERUM <i>by IFCC, WITHOUT PYRIDOXAL PHOSPHATE</i>	11.8	U/L	0.00 - 49.00
AST/ALT RATIO: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	1.31	RATIO	0.00 - 46.00
ALKALINE PHOSPHATASE: SERUM <i>by PARA NITROPHENYL PHOSPHATASE BY AMINO METHYL PROPANOL</i>	107.8	U/L	40.0 - 130.0
GAMMA GLUTAMYL TRANSFERASE (GGT): SERUM <i>by SZASZ, SPECTROPHOTOMETRY</i>	18.33	U/L	0.00 - 55.0
TOTAL PROTEINS: SERUM <i>by BIURET, SPECTROPHOTOMETRY</i>	6.71	gm/dL	6.20 - 8.00
ALBUMIN: SERUM <i>by BROMOCRESOL GREEN</i>	3.69	gm/dL	3.50 - 5.50
GLOBULIN: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	3.02	gm/dL	2.30 - 3.50
A : G RATIO: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	1.22	RATIO	1.00 - 2.00

#### INTERPRETATION


**NOTE:-** To be correlated in individuals having SGOT and SGPT values higher than Normal Reference 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 cholestasis: 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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<b>KIDNEY FUNCTION TEST (BASIC)</b>			
UREA: SERUM <i>by UREASE - GLUTAMATE DEHYDROGENASE (GLDH)</i>	15.95	mg/dL	10.00 - 50.00
CREATININE: SERUM <i>by ENZYMATIC, SPECTROPHOTOMETRY</i>	0.83	mg/dL	0.40 - 1.20
BLOOD UREA NITROGEN (BUN): SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	7.45	mg/dL	7.0 - 25.0
BLOOD UREA NITROGEN (BUN)/CREATININE RATIO: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	8.98 <sup>L</sup>	RATIO	10.0 - 20.0
UREA/CREATININE RATIO: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	19.22	RATIO	
URIC ACID: SERUM <i>by URICASE - OXIDASE PEROXIDASE</i>	2.53	mg/dL	2.50 - 6.80



  
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**INTERPRETATION:**

Normal range for a healthy person on normal diet: 12 - 20

To Differentiate between pre- and postrenal azotemia.

**INCREASED RATIO (>20:1) WITH NORMAL CREATININE:**

1. Prerenal azotemia (BUN rises without increase in creatinine) e.g. heart failure, salt depletion, dehydration, blood loss) due to decreased glomerular filtration rate.
2. Catabolic states with increased tissue breakdown.
3. GI hemorrhage.
4. High protein intake.
5. Impaired renal function plus .
6. Excess protein intake or production or tissue breakdown (e.g. infection, GI bleeding, thyrotoxicosis, Cushings syndrome, high protein diet, burns, surgery, cachexia, high fever).
7. Urine reabsorption (e.g. ureterocolostomy)
8. Reduced muscle mass (subnormal creatinine production)
9. Certain drugs (e.g. tetracycline, glucocorticoids)

**INCREASED RATIO (>20:1) WITH ELEVATED CREATININE LEVELS:**

1. Postrenal azotemia (BUN rises disproportionately more than creatinine) (e.g. obstructive uropathy).
2. Prerenal azotemia superimposed on renal disease.

**DECREASED RATIO (<10:1) WITH DECREASED BUN :**

1. Acute tubular necrosis.
2. Low protein diet and starvation.
3. Severe liver disease.
4. Other causes of decreased urea synthesis.
5. Repeated dialysis (urea rather than creatinine diffuses out of extracellular fluid).
6. Inherited hyperammonemias (urea is virtually absent in blood).
7. SIADH (syndrome of inappropriate antidiuretic hormone) due to tubular secretion of urea.
8. Pregnancy.

**DECREASED RATIO (<10:1) WITH INCREASED CREATININE:**

1. Phenacimide therapy (accelerates conversion of creatine to creatinine).
2. Rhabdomyolysis (releases muscle creatinine).
3. Muscular patients who develop renal failure.

**INAPPROPRIATE RATIO:**

1. Diabetic ketoacidosis (acetoacetate causes false increase in creatinine with certain methodologies, resulting in normal ratio when dehydration should produce an increased BUN/creatinine ratio).
2. Cephalosporin therapy (interferes with creatinine measurement).





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### IMMUNOPATHOLOGY/SEROLOGY

#### C-REACTIVE PROTEIN (CRP)

<b>C-REACTIVE PROTEIN (CRP) QUANTITATIVE:</b>	50.07 <sup>H</sup>	mg/L	0.0 - 6.0
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SERUM

by NEPHLOMETRY


#### 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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<b>CLIENT CODE.</b>	: KOS DIAGNOSTIC LAB		
<b>CLIENT ADDRESS</b>	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval
<b>DENGUE FEVER COMBO SCREENING - (NS1 ANTIGEN, IgG AND IgM)</b>			
DENGUE NS1 ANTIGEN - SCREENING <i>by ICT (IMMUNOCHROMATOGRAPHY)</i>	NEGATIVE (-ve)		NEGATIVE (-ve)
DENGUE ANTIBODY IgG - SCREENING <i>by ICT (IMMUNOCHROMATOGRAPHY)</i>	NEGATIVE (-ve)		NEGATIVE (-ve)
DENGUE ANTIBODY IgM - SCREENING <i>by ICT (IMMUNOCHROMATOGRAPHY)</i>	NEGATIVE (-ve)		NEGATIVE (-ve)

**INTERPRETATION:-**

- 1.This is a solid phase immunochromatographic ELISA test for the qualitative detection of the specific IgG and IgM antibodies against the Dengue virus.
- 2.The IgM antibodies 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.
- 3.The IgG antibodies develop at least two weeks after exposure to primary infection and subsequently remain positive for the rest of the life. A positive result is incapable of differentiating a current infection from a past infection.
- 4.The Dengue NS-1 antigen test is most suited for early diagnosis (within the first week of exposure).



  
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<b>NAME</b>	: Mrs. PUSHPA RANI	<b>PATIENT ID</b>	: 1545596
<b>AGE/ GENDER</b>	: 48 YRS/FEMALE	<b>REG. NO./LAB NO.</b>	: 012407110044
<b>COLLECTED BY</b>	:	<b>REGISTRATION DATE</b>	: 11/Jul/2024 01:04 PM
<b>REFERRED BY</b>	:	<b>COLLECTION DATE</b>	: 11/Jul/2024 01:06 PM
<b>BARCODE NO.</b>	: 01512940	<b>REPORTING DATE</b>	: 11/Jul/2024 02:12 PM
<b>CLIENT CODE.</b>	: KOS DIAGNOSTIC LAB		
<b>CLIENT ADDRESS</b>	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval
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#### WIDAL SLIDE AGGLUTINATION TEST

SALMONELLA TYPHI O by SLIDE AGGLUTINATION	1 : 80	TITRE	1 : 80
SALMONELLA TYPHI H by SLIDE AGGLUTINATION	1 : 40	TITRE	1 : 160
SALMONELLA PARATYPHI AH by SLIDE AGGLUTINATION	NIL	TITRE	1 : 160
SALMONELLA PARATYPHI BH 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 repetition 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 O agglutinins indicate recent infection.

\*\*\* End Of Report \*\*\*



  
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