



Name : MD ASHRAFUL ALAM
PP : A01856220 **Lab No** : 11L0168842
DOB : 12.12.1997 **MRN** : HH1100382300
Age/Gender : 26 y 1 m 17 d / Male **Location** : PENANG HEALTH SCREENING CENTRE

Reference:

Branch : Penang Lab
Collected : 29.01.2024 10:12:24
Received : 29.01.2024 10:13:32
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Requester : DR Don Wyane Thakur Singh
Pantai Hospital Penang, 82, Jalan Tengah, Bayan Baru, Bayan Lepas, Pulau Pinang 11900

TEST	RESULT	FLAG	UNIT	REFERENCE RANGE
HAEMATOLOGY				
Full Blood Count				
Haemoglobin	15.2		g/dL	(13.0 - 18.0)
Red Blood Cell	5.39		x10^12/L	(4.50 - 6.50)
Red Cell Distribution Width	13.0		%	(<14.3)
Packed Cell Volume	48		%	(40 - 54)
Mean Cell Volume	88		fL	(76 - 96)
Mean Cell Haemoglobin	28		pg	(28 - 34)
Mean Corpuscular Hb Concentration	32		g/dL	(30 - 36)
White Blood Cell	4.9		x10^9/L	(4.0 - 11.0)
Neutrophils (%)	46.1		%	(40.0 - 75.0)
Lymphocytes (%)	42.2		%	(20.0 - 45.0)
Monocytes (%)	7.8		%	(2.0 - 10.0)
Eosinophils (%)	3.1		%	(0.0 - 6.0)
Basophils (%)	0.8		%	(0.0 - 1.0)
Neutrophils (Absolute Value)	2.3		x10^9/L	(2.0 - 7.5)
Lymphocytes (Absolute Value)	2.1		x10^9/L	(1.5 - 4.5)
Monocytes (Absolute Value)	0.4		x10^9/L	(0.2 - 0.8)
Eosinophils (Absolute Value)	0.15		x10^9/L	(0.04 - 0.40)
Basophils (Absolute Value)	0.0		x10^9/L	
Platelet	194		x10^9/L	(150 - 400)
Erythrocyte Sedimentation Rate	2		mm/hr	(<31)

BLOOD BANK

Blood Group (ABO & Rh) AB Rh (D) Positive



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TEST	RESULT	FLAG	UNIT	REFERENCE RANGE
BIOCHEMISTRY				
Liver Function Test				
Total Protein	76		g/L	(64 - 83)
Albumin	49		g/L	(35 - 50)
Globulin	27		g/L	(23 - 35)
Albumin-Globulin Ratio	1.81			
Alkaline Phosphatase	83		U/L	(56 - 167)
Aspartate Transaminase	22		U/L	(5 - 34)
Alanine Transaminase	22		U/L	(0 - 55)
Gamma-Glutamyl Transferase	32		U/L	(12 - 64)
Bilirubin, Total	31.5	*	umol/L	(3.4 - 20.5)
Bilirubin, Direct	7.4		umol/L	(0 - 8.6)
Bilirubin, Indirect	24.1	*	umol/L	(0 - 7.0)



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TEST	RESULT	FLAG	UNIT	REFERENCE RANGE
Renal Function Profile				
Sodium	141		mmol/L	(136 - 146)
Potassium	4.0		mmol/L	(3.5 - 5.1)
Chloride	106		mmol/L	(96 - 109)
Urea Nitrogen	3.2		mmol/L	(2.1 - 7.1)
Creatinine	77		umol/L	(53 - 106)
Estimated - GFR (CKD-EPI)	>90		ml/min/1.73m2	(>90)
Uric Acid	0.41		mmol/L	(0.22 - 0.45)
Glucose	4.9		mmol/L	(3.9 - 6.0)

Interpretation:

Category	Plasma Glucose (mmol/L)	
	Fasting	Random
Normal	3.9 - 6.0	3.9 - 7.7
IFG (Prediabetes)	6.1 - 6.9	
Indeterminate		7.8 - 11.0
Diabetes Mellitus	>=7.0	>=11.1

IFG: Impaired fasting glucose;

Recommend Oral Glucose Tolerance Test (OGTT) for fasting plasma glucose levels 6.1 - 6.9 mmol/L or random plasma glucose levels 7.8 - 11.0 mmol/L.

Source: 2020 Clinical Practice Guidelines for the Management of Type 2 Diabetes Mellitus (6th Edition). Kuala Lumpur: Joint Publication of the Ministry of Health Malaysia, Academy of Medicine Malaysia, Malaysian Endocrine & Metabolic Society and Diabetes Malaysia.



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TEST	RESULT	FLAG	UNIT	REFERENCE RANGE
Glycated Haemoglobin (HbA1C)				
HbA1c, NGSP unit	5.4		%	(<5.7)
HbA1c, SI unit	36		mmol/mol	
(Method: Ion exchange HPLC)				
Diagnostic Values of HbA1c in Malaysian Adults				
HbA1c (NGSP) %	HbA1c (IFCC) mmol/mol			
< 5.7	< 39	Normal		
5.7-6.2	39-44	*Prediabetes (IFG or IGT)		
≥ 6.3**	≥ 45**	T2DM		

IFG: Impaired fasting glucose; IGT: Impaired Glucose Tolerance;
OGTT: Oral Glucose Tolerance Test; T2DM: Type 2 Diabetes Mellitus

*Recommend OGTT for HbA1c levels 5.7-6.2%.

**As type 1 diabetes mellitus (T1DM) may develop rapidly, HbA1c may not be raised, and cannot be used reliably to diagnose T1DM.

Individualised HbA1c Target for Known Diabetes

HbA1c (NGSP) %	HbA1c (IFCC) mmol/mol	
≤ 6.5	≤ 48	A: Tight target range for young, newly diagnosed diabetes without hypoglycaemia.
6.6-7.0	49-53	B: Target range for all other individuals not in category A or C.
7.1-8.0	54-64	C: Target range for diabetes and comorbidities, short life expectancy and/or prone to hypoglycaemia.

Source: 2020 Clinical Practice Guidelines for the Management of Type 2 Diabetes Mellitus (6th Edition). Kuala Lumpur: Joint Publication of the Ministry of Health Malaysia, Academy of Medicine Malaysia, Malaysian Endocrine & Metabolic Society and Diabetes Malaysia.



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TEST	RESULT	FLAG	UNIT	REFERENCE RANGE
Lipid Profile				
Cholesterol, Total	6.3	*	mmol/L	(<5.2)
Cholesterol, HDL	1.1		mmol/L	(>1)
Cholesterol, Non-HDL	5.2	*	mmol/L	(<3.4)
Cholesterol, LDL	4.6	*	mmol/L	(<2.6)
Triglycerides	1.4		mmol/L	(<1.7)
Cholesterol/HDL Ratio	5.7	*		(<3.5)

IMMUNOLOGY & SEROLOGY

Hepatitis Bs Antigen	Non-Reactive		
Hepatitis Bs Antibody	Non-Reactive	IU/L	(Reactive (>10))

FEME
Urine FEME

Appearance	Clear		
Colour	Yellow		
pH	6.0		(5.0 - 8.0)
Urine Specific Gravity	1.004	*	(1.005 - 1.030)
Urine Nitrite	Negative		
Urine Protein	Negative		
Urine Glucose	Negative		
Urine Ketone	Negative		
Urine Urobilinogen	3.2	umol/L	(<16)
Urine Bilirubin	Negative		
Urine Blood	Negative		
Urine Leucocytes	Negative		

Microscopic Examination

Red Blood Cell	Nil	/uL	(<4)
White Blood Cell	Nil	/uL	(<7)
Epithelial Cell	Nil	/uL	
Crystal	Nil		
Cast	Nil		
Bacteria	Nil		
Mucus	Nil		
Other	Nil		



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Test(s) requested: BILSE,ZHBA1,PHP1

Specimen Received: EDTAB,PLSF,S,U