

Patient's Name : Ashok Majmudar
Age/Sex : 71 Years /Male
Referred by : C/o. Dr At Doorstep



Ref.No. : HL-7476-21
Reg. Date : 05/08/2021 08:53
Collection. Time : 05/08/2021 8:10

HAEMOGRAM

EDTA whole Blood

TEST	RESULT	UNIT	BIOLOGICAL REF INTERVAL
HAEMOGLOBIN	: 11.2	gms/dl	13.5 - 18.0
RBC INDICES			
Total R.B.C. Count	: 5.66	millions/cu.mm	4.5 - 6.5
Packed Cell Volume	: 37.6	%	40 - 54
M. C. V.	: 66.4	cu.micron	78 - 96
M. C. H.	: 19.8	picogram	27 - 32
M. C. H. C.	: 29.8	g / dl	30 - 35
R. D. W.	: 20.2	%	11 - 15
TOTAL W. B. C. COUNT	: 11100	/cu.mm	4000 - 11000
DIFFERENTIAL COUNT			
Neutrophils	: 61.8	%	50 - 70
Lymphocytes	: 28.6	%	20 - 40
Eosinophils	: 3.1	%	01 - 04
Monocytes	: 5.8	%	02 - 06
Basophils	: 0.7	%	00 - 01
PLATELET COUNT	: 3.19	Lakh	1.5 - 4.5

authorized signatory

verify by : mukesh j
reporting Verification Time : 05/08/2021 13:05:00
report print Date/Time : 05/08/2021 18:18
---: end of report :---

dr. d.p.kapuriya
m.d.(path)
G 15379

dr.khushbu chaudhari
m.d.(path)
G 21850

Patient's Name : Ashok Majmudar
Age/Sex : 71 Years /Male
Referred by : C/o. Dr At Doorstep



Ref.No. : HL-7476-21
Reg. Date : 05/08/2021 08:53
Collection. Time : 05/08/2021 8:10

PLASMA GLUCOSE / BLOOD SUGAR - URINE SUGAR ESTIMATION

TESTS	RESULTS	UNITS	BIOLOGICAL REF INTERVAL
PLASMA GLUCOSE			
FBS (Fasting blood sugar)	129	mg / dl	60 - 110
PP2BS (Postprandial blood sugar at 2 hrs)	132	mg / dl	Less than 145
FUS (Fasting urine sugar)	Absent		Absent

URINE ACETONE

authorized signatory

verify by : mukesh j
reporting Verification Time : 05/08/2021 16:48:00
report print Date/Time : 05/08/2021 18:18
---: end of report :---

dr. d.p.kapuriya
m.d.(path)
G 15379

dr.khushbu chaudhari
m.d.(path)
G 21850

Patient's Name : Ashok Majmudar
Age/Sex : 71 Years /Male
Referred by : C/o. Dr At Doorstep



Ref.No. : HL-7476-21
Reg. Date : 05/08/2021 08:53
Collection. Time : 05/08/2021 8:10

BIOCHEMICAL ANALYSIS (Serum)

APPEARANCE :

TESTS	RESULTS	UNITS	Biological Ref Interval
S.CREATININE method : Jafferate	1.57	mg / dl	M : 0.7 TO 1.4 F : 0.6 TO 1.1

authorized signatory

verify by : mukesh j
reporting Verification Time : 05/08/2021 13:05:00
report print Date/Time : 05/08/2021 18:18
---: end of report :---

dr. d.p.kapuriya
m.d.(path)
G 15379

dr.khushbu chaudhari
m.d.(path)
G 21850

Patient's Name : Ashok Majmudar
Age/Sex : 71 Years /Male
Referred by : C/o. Dr At Doorstep



Ref.No. : HL-7476-21
Reg. Date : 05/08/2021 08:53
Collection. Time : 05/08/2021 8:10

C - REACTIVE PROTEIN serum

PRINCIPLE : Particle enhanced turbidimetric assay
CONCENTRATION : 3.5 mg / l
Biological Ref Interval : Less than 6 mg / l
RESULT : Negative

authorized signatory

verify by : mukesh j
reporting Verification Time : 05/08/2021 13:05:00
report print Date/Time : 05/08/2021 18:18
---: end of report :---

dr. d.p.kapuriya
m.d.(path)
G 15379

dr.khushbu chaudhari
m.d.(path)
G 21850

Patient's Name : Ashok Majmudar

Ref.No. : HL-7476-21

Age/Sex : 71 Years /Male



Reg. Date : 05/08/2021 08:53

Referred by : C/o. Dr At Doorstep

Collection. Time : 05/08/2021 8 : 10

Hb A1c - Fact file

Glycohaemoglobin is being used with increasing frequency to monitor long term blood glucose control and compliance in patient with diabetes mellitus. It provides an index of mean concentration of blood glucose (eAG - estimated average glucose) during the preceding two to three months. It complements more traditional measures of glucose control such as blood and urine glucose level.

The term " Glycohaemoglobin / Glycosylated haemoglobin / Hb A1c " refers to a series of minor haemoglobin components that are **stable adducts formed by haemoglobin with various sugars**. The reaction between haemoglobin and sugar is an example of a nonenzymatic condensation of glucose with free amino groups on the globin (NH₂ terminal valine of B chain). The process is slow , continuous and irreversible.

Human erythrocytes are freely permeable to glucose , **Within each erythrocyte GHb is formed from haemoglobin at the rate which depends on the ambient concentration of glucose. Higher the prevailing ambient level of blood glucose , higher the GHb**

The level of Hb A1c at any point of time is contributed to by all circulating erythrocytes , from oldest (120 days) to the youngest RBCs. Hence Hb A1c is a **" weighted average " of glucose during the preceding three months** , near preceding 30 days contributes substantially more to the level of Hb A1c than do glucose level 90 -120 days earlier..

There is very predictable relationship between Hb A1c and eAG (estimated average glucose / weighted average glucose).

A formula based on linear regression analysis sponsored by ADA , EASD , IDF is $eAG (mg / dl) = (28.7 * Hb A1c) - 46.7$ replacing the older one $eAG (mg / dl) = (35.6 * Hb A1c) - 77.3$ recommended by DCCT .

Post lunch and bedtime glucose correlate well with Hb A1c (data of full 7 point glucose profile by capillary blood). Fasting glucose correlates less well and with increasing Hb A1c and average glucose (eAG) from 7 point profile , it underestimate both the values.

Any cause of shortened red cell survival will reduce exposure of red cells to glucose with consequent decrease in GHb values e.g. haemolytic anaemias like Hb S , Hb C Harlem , Hb E , Hb D . Chronic blood loss , Acute recent blood loss , etc.

A falsely low GHb test results are also be noted in c/o high Hb F samples . Thalassemia major , HPFH and othe conditions.

(Hb F > 10 %) . Glycated Hb F is not detected by assay as it does not contain the glycated B chain that characterizes Hb A1c.

A falsely elevated GHb test results can be caused by " labile GHb " - an acutely generated reversible nonenzymatic linked glucose intermediary product present after heavy meal .

Few medical condition may cause falsely elevated Hb A1c , like uremia , chronic excessive alcohol intake and hypertriglyceridemia.

Thalassemia minor causing imbalance between the synthesis of a and b chain causes falsely elevated values.

Chronic iron deficiency anaemia in which there is an increased erythrocyte life span can raise GHb falsely.

Gestational diabetes may falsely increase or decrease Hb A1c

Studies even relate Hb A1c values with temperature / seasonal variation . Values are higher in cooler months and lower in warmer months (June - July).

IS SPECIFIC PATIENT PREPARATION IS NECESSARY ?

In any case , **no fasting sample is required at all . Avoid alcohol intake and heavy meal before the assay**

Hb A1c results are to be reported by clinical laboratories world wide in SI units (mmol / mol - no decimals) or derived NGSP units (% - one decimal) . using IFCC - NGSP master equation,

An international expert committee that includes representatives from American Diabetes Association (ADA) , International

Patient's Name : Ashok Majmudar
Age/Sex : 71 Years /Male
Referred by : C/o. Dr At Doorstep



Ref.No. : HL-7476-21
Reg. Date : 05/08/2021 08:53
Collection. Time : 05/08/2021 8:10

Diabetes Federation (IDF) , and European Association for the Study of Diabetes (EASD) has **officially endorsed the Hb A1c as the Diagnostic test for the Diabetes . Cut off is ≥ 6.5**

WHY HB A1c IS CLINICALLY IMPORTANT

According to DCCT , a linear relationship is documented between the lowering Hb A1c / eAG and prevention of chronic complications . If Hb A1c is maintained at or about the upper level of normal , it can reduce app. 75 % retinal (eye) 60 % neuronal (nervous system) and 35 % renal (kidney) complications.

A reliable at-risk marker for assessing possible development of complications
An excellent mean to assess , encourage and reinforce individual patient compliance
An indicator for additional diagnostic tests such as Urine Microalbumin
A meaningful Mean Blood Glucose (MBG) / estimated Average Glucose (eAG) relationship
An useful method to judge the efficacy and effectiveness of intervention strategies.

WHAT ARE THE ADA RECOMMENDATIONS TO PREVENT COMPLICATED DIABETES

- * Perform the A1c test at least two times a year in patient who are meeting treatment goals and have stable glycemic control
- * Perform the A1c test quarterly in patient whose therapy has changed or who are not meeting glycemic control.
- * Use of point-of-care testing for A1c allow for timely decisions on therapy changes when needed.

GLYCEMIC GOAL IN ADULT BY ADA.

To reduce microvascular and neuropathic complications of type 1 and type 2 diabetic patients - **below or around 7 %**

REFERENCES (Data published by)

1. American Diabetic Association (ADA)
2. Internationa Diabetic Federation (IDF)
3. European Association for Study of Diabetes (EASD)
4. American Association of Clinical Endocrinologist
5. National Glycohaemoglobin Standardization Programme (NGSP)
6. Diabete Control and Complications Trial (DCCT)
7. A Journal of Disease metabolism

authorized signatory

verify by : mukesh j
reporting Verification Time : 05/08/2021 18:06:00
report print Date/Time : 05/08/2021 18:18
---: end of report :---

dr. d.p.kapuriya
m.d.(path)
G 15379

dr.khushbu chaudhari
m.d.(path)
G 21850

Patient's Name : Ashok Majmudar
Age/Sex : 71 Years /Male
Referred by : C/o. Dr At Doorstep



Ref.No. : HL-7476-21
Reg. Date : 05/08/2021 08:53
Collection. Time : 05/08/2021 8:10

Glycosylated Hb / Glycated Hb / Hb A1c

Method Tina - quant

Interpretation (% Glyco Hb)

> 8	Poor glycemic control
7 - 8	Fair glycemic control
6 - 6.9	Good glycemic control
< 6	Non-diabetic level / Near normal glycemia

Result 8.3

estimated Average Glucose (eAG) 191.5 mg / dl

Comment

authorized signatory

verify by : mukesh j
reporting Verification Time : 05/08/2021 13:49:00
report print Date/Time : 05/08/2021 18:18
---: end of report :---

dr. d.p.kapuriya
m.d.(path)
G 15379

dr.khushbu chaudhari
m.d.(path)
G 21850

Patient's Name : Ashok Majmudar
Age/Sex : 71 Years /Male
Referred by : C/o. Dr At Doorstep



Ref.No. : HL-7476-21
Reg. Date : 05/08/2021 08:53
Collection. Time : 05/08/2021 18:10

SERUM ELECTROLYTES

TESTS	RESULTS	UNITS	NORMALS
S. SODIUM	139	mmol/L	135 - 145
S. POTASSIUM	4.5	mmol/L	3.5 - 5.5
S. CHLORIDE	102	mmol/L	98 - 108
S. BICARBONATE	28	mmol/L	21 - 31

authorized signatory

verify by : mukesh j
reporting Verification Time : 05/08/2021 13:06:00
report print Date/Time : 05/08/2021 18:18
---: end of report :---

dr. d.p.kapuriya
m.d.(path)
G 15379

dr.khushbu chaudhari
m.d.(path)
G 21850

Patient's Name : Ashok Majmudar
Age/Sex : 71 Years /Male
Referred by : C/o. Dr At Doorstep



Ref.No. : HL-7476-21
Reg. Date : 05/08/2021 08:53
Collection. Time : 05/08/2021 8:10

URINE ANALYSIS

SPECIMEN : Fasting

PHYSICAL EXAMINATION

RESULT

NORMAL

Quantity (ml)	10	600 - 2500 / 24 hrs
Colour	Pale yellow	Pale yellow
Appearance	Clear	Clear
Reaction (PH)	6.0	5.0 - 8.5
Sp. Gravity	#####	1.000 - 1.030

CHEMICAL EXAMINATION

Protein	Trace	0 - 0.1 gm / 24 hrs
Sugar (Glucose)	Absent	Absent
Ketone	Absent	Absent
Bilirubin	Absent	Absent
Urobilinogens	Normal	0 - 04 mg / 24 hrs
Bile Salts	Absent	Absent
Bile Pigments	Absent	Absent
Occult blood	Absent	Absent

MICROSCOPIC EXAMINATION / HPF

Pus Cells	25 -- 30	0 - 1
Red Blood Cells	Absent	Absent
Epithelial Cells	2 -- 3	2 - 3
Casts (/ lpf)	Not seen	
Crystals	Not seen	

authorized signatory

verify by : mukesh j
reporting Verification Time : 05/08/2021 13:07:00
report print Date/Time : 05/08/2021 18:18
---: end of report :---

dr. d.p.kapuriya
m.d.(path)
G 15379

dr.khushbu chaudhari
m.d.(path)
G 21850