



Mr. SURIDER MANCHANDA
 AMBALA Ambala City H.O
 Tel No : 9874458555
 PIN No: 134003
 PID NO: P39424522591259
 Age: 62 Year(s) Sex: Male



Reference: SELF
 Sample Collected At:
 DR VINAY KUMAR CHOPRA
 DR VINAY KUMAR CHOPRA KOS
 Diagnostic Lab 6349/I Nicholson Road
 Ambala Cantt HRY 133001. 06-HR 13
 Sample Processed At: Metropolis
 Healthcare Ltd E-21, B1 Mohan Co-op Ind
 Estate New Delhi-110044

VID: 240333100779087
 Registered On:
 24/04/2024 07:19 PM
 Collected On:
 24/04/2024 7:17PM
 Reported On:
 25/04/2024 01:39 PM

Investigation	Observed Value	Unit	Biological Reference Interval
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SERUM, PROTEIN ELECTROPHORESIS

(Serum)

Total Protein (Biuret)	9.5		6.2-8.1
Serum Albumin	4.68	g/dL	3.57-5.42
Alpha 1 Globulin	0.42	g/dL	0.19-0.40
Alpha 2 Globulin	0.88	g/dL	0.45-0.96
Beta 1 Globulin	0.61	g/dL	0.30-0.59
Beta 2 Globulin	0.6	g/dL	0.20-0.53
Gamma Globulin	2.31	g/dL	0.71-1.54
Albumin, Globulin Ratio	20.97		1.1-2.2
"M" Band	See comment		Absent

Comment Distortion seen in gamma region.
 Hypergammaglobulinemia.

Comments :Adv: Immunofixation studies(I0262).

Interpretation :

1. Serum protein electrophoresis is commonly used to identify multiple myeloma & related disorders.
2. Electrophoresis is a method of separating proteins based on their physical properties & the pattern is dependant on the fractions of 2 types of protein: Albumin & Globulin (alpha1, alpha2, beta & gamma).

Components	Major Components	Interferences
Albumin	Albumin	Lipoproteins, Drugs, Bilirubin, Radiological contrast
Alpha1 - globulins	α-1 antitrypsin, α-1 acid glycoprotein	-
Alpha2 - globulins	α-2 macroglobulin, haptoglobin	Haptoglobin - haemoglobin complex
Beta globulins	Transferrin, β-lipoprotein, IgA, IgM & sometimes IgG with complement proteins – C3 & C4	Fibrinogen
Gamma globulins	IgG, IgA, IgM, IgD, IgE	CRP

Chakshu



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Direct detection at 200 nm in capillaries yields relative concentrations (percentages) of individual protein zones.

Remarks :

1. In following conditions serum Immunofixation is required to confirm monoclonal gammopathy or to differentiate monoclonal and polyclonal disorders.

(A) A well defined 'M' band

(B) Non-discrete bands..

(C) Chronic inflammatory pattern (decreased Albumin, increased Alpha, increased Gamma region), which may mask the monoclonal band.

(D) Isolated increase in any region, with otherwise normal pattern.

2. SPE- Distortions/ Non-Discrete bands:

Distortions in Serum Protein Electrophoresis (SPE) usually affect curves of the gamma, beta, and alpha-2 peaks. Distortions are subtle, non-discrete bands which cannot be quantified & therefore not plotted on the graphs. These could be seen in the following situations:

a) Patients on therapy for Multiple myeloma.

b) Distortions at the point of sample application can be especially problematic when one is dealing with cryoglobulins (often precipitates at the origin).

c) Monoclonal gammopathies involving any of beta-migrating immunoglobulins (produce subtle distortion of the transferrin or C3 band)

d) Subtle distortions in the beta & gamma regions may indicate towards Ig D / Ig E gammaopathies.

Method : Capillary Electrophoresis



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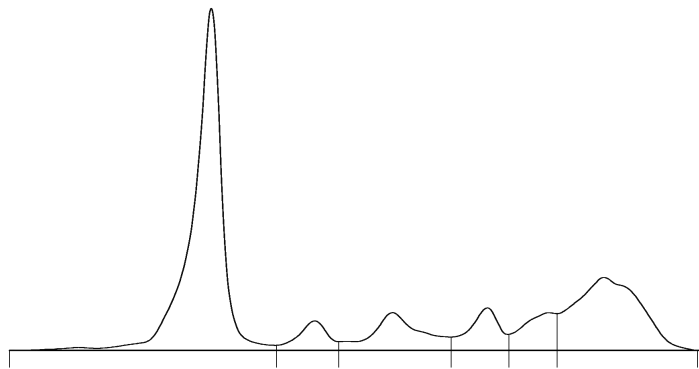
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Investigation Observed Value Unit Biological Reference Interval

PROTEIN ELECTROPHORESIS

Name: **SURINDER MANCH**
 Sample : **19**
 Sex : **M**

Date: **4/25/2024**
 ID: **0512918086**
 Age : **62**



A/G Ratio: **0.97**
 T. P.: **9.5** g/dL



Fractions	%		Ref. %	Conc.	Ref. Conc.
Albumin	49.3	<	55.8 - 66.1	4.68	3.57 - 5.42
Alpha 1	4.4		2.9 - 4.9	0.42	0.19 - 0.40
Alpha 2	9.3		7.1 - 11.8	0.88	0.45 - 0.96
Beta 1	6.4		4.7 - 7.2	0.61	0.30 - 0.59
Beta 2	6.3		3.2 - 6.5	0.60	0.20 - 0.53
Gamma	24.3	>	11.1 - 18.8	2.31	0.71 - 1.54

Signature

-- End of Report --



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Chakshu
Dr. Chakshu Bansal
 M.D (Pathology)
 (DMC Reg. No. - 66994)