MAY 2022
ISSUE 05

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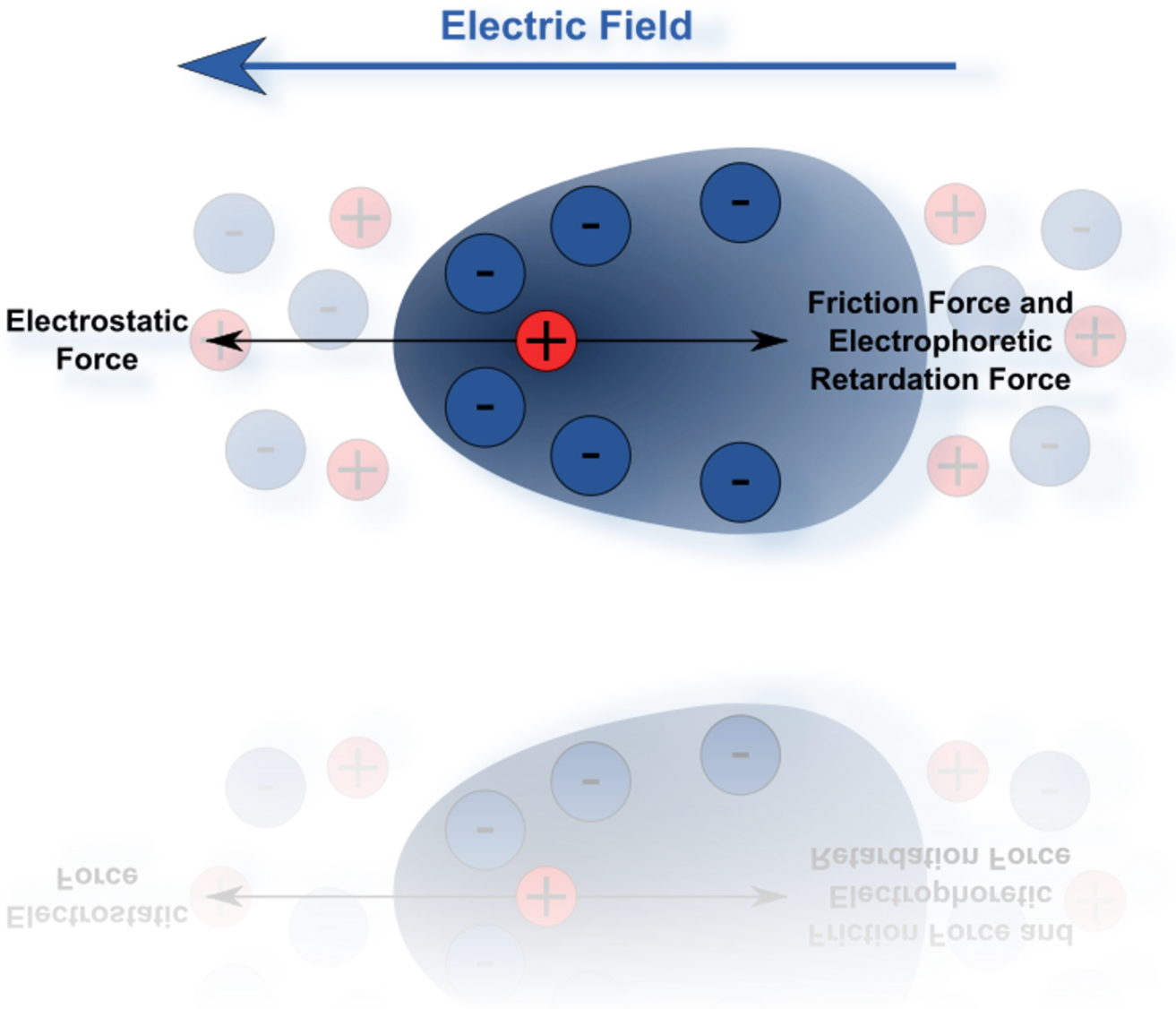
News bulletin of AMBI
West Bengal Chapter

The Biochemistry Chronicles



A RARE CASE OF BISALBUMINEMIA IN A 61-YEAR-OLD MALE PATIENT

Bisalbuminemia or alloalbuminemia is an inherited or acquired, rarely encountered serum protein anomaly, characterized by the occurrence of bicuspid electrophoretic pattern in the albumin fraction detected on serum electrophoresis. It can be seen in densitometry as a bifid

mountain where albumin has two heads. These albumin mutants also called alloalbumins either have increased electrophoretic mobility (fast type variants) or decreased mobility (slow type variants). The cumulative frequency of inherited bisalbuminemia is typically 1:10000 to 1:1000, with inheritance showing an autosomal codominant pattern. Inherited bisalbuminemia has no pathologic or therapeutic consequences, but it is of interest for investigations of the evolution of functional differences in the protein, including altered affinity for steroid hormones, thyroxine, and several dyes. The presence of acquired or transient bis-albuminemia have been described in various pathological conditions including diabetes mellitus, Waldenström's macroglobuli -nemia, multiple myeloma, sarcoidosis, Alzheimer's disease, pancreatic pseudocyst, nephrotic syndrome, chronic kidney disease and also in patients receiving high doses of penicillin.

We recently encountered a case of a 61-year-old male patient, who has a chronic history of type 2 Diabetes Mellitus, dyslipi -daemia, and chronic kidney disease (Stage-III). The patient was referred to our center to rule out any monoclonal gammopathy. Serum capillary electro -phoresis by Sebia Capillary Electrophoresis System revealed no band suggestive of M-spike but revealed a distinct bifid peak of serum albumin zone.

A laboratory examination of other parameters revealed the following picture:

Table 1: Results of the patient's biological assessment

Parameters	Results	Biological
Fasting	109 mg/dL	≤ 126 mg/
PP Plasma	169 mg/dL	≤ 200 mg/
Serum	1.98 mg/dL	0.7-1.3 mg/
Serum	9.40 mg/dL	8.7-10.4
Serum Uric	5.9 mg/dL	3.5-7.2 mg/
Serum	4.5 mg/dL	2.4-5.1 mg/
HbA1c	7.4%	≤ 6.5 %

On serum capillary protein electrophoresis, we got the following picture:

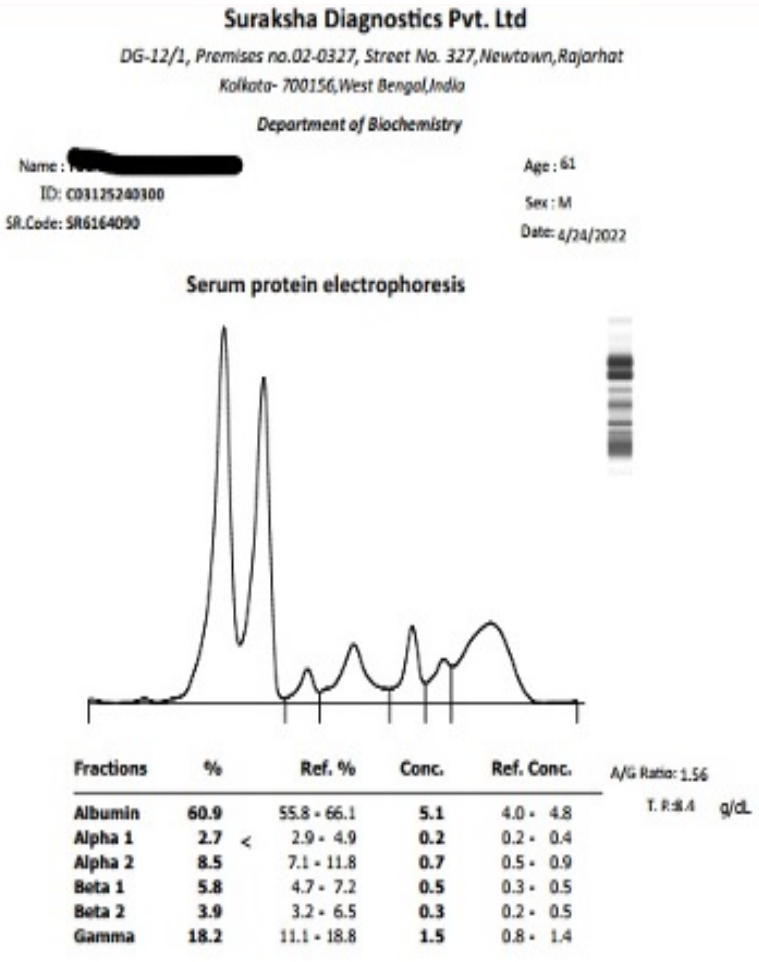


Fig 1. Serum protein electrophoresis showing bifid albumin

We suggested the patient to follow-up after 6 months to rule out any acquired aetiology of this condition as the patient has multiple co-morbidities which may be related to the acquired cause of this appearance of alloalbumin.

Reference:

1. Kobayashi S, Okamura N, Kamoi K, Sugita O. Bisalbumin (fast and slow type) induced by human pancreatic juice. Ann Clin Biochem 1995; 32:63-7
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4. Arai K, Ishioka N, Huss K, Madison J, PutnamFW. Identical structural changes in inherited albumin variants from different populations. Proc Natl Acad Sci U S A 1989;86:434–8
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A CASE OF DELTA BETA THALASSEMIA TRAIT

Delta beta thalassaemia is a rare variant of thalassaemia with elevated fetal hemoglobin (HbF) with normal values of HbA2. Incidence of delta beta thalassaemia has been found to be 0.73% by the ICMR multicenter study. The pathology results from a deletion in both delta and beta genes on chromosome 11 which compels gamma genes on the affected chromosome to increase the production of gamma globin resulting into elevated fetal hemoglobin (Hb F). The symptoms in hetero -zygous condition mostly comparable to the characteristics of thalassemia minor while in homozygous cases they may resemble cases of thalassemia intermedia with a mild anemia. Heterogeneous distribution of HbF among RBCs may lead to two different RBC populations which consequently results to an elevated RDW in patients with δβ-TT. According to RDW, patients with δβ-TT can be discriminated from those with β-TT.

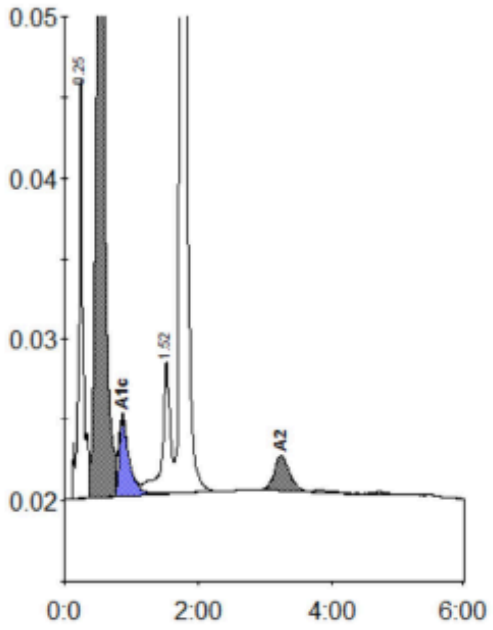
We recently encountered a case of a 35yr old male patient who incidentally got diagnosed with Delta beta thassemia trait while screening for β-thalassemia trait for a pre marital purpose.

The patient came to our centre and his Haemoglobin typing was done by HPLC which revealed elevated HbF (26%) while HbA2 remained normal (2.3%) . The differential in this case was HPFH trait which was ruled out with the help of the hematologic parameters , MCV, MCH were low ,the red cell morphology being abnormal. The patient was diagnosed to be a heterozygous case as HbF was 26% unlike homozygous which would have shown HbF to be 100% in the chromatogram.

A laboratory examination of the hematogical parameters revealed :

Parameters	Values	Ref int
Hemo globin	15.3 gm/dl	13-17 gm/ dl
RBC	5.77*10^6/μl	4.5-5.5*10^ 6/μl
Hematocrit	47.7%	40-50%
MCV	82.7 fl	83-101 fl
MCH	26.6pg	27-32pg
RDW	14.3%	11.6-14%

Bio-Rad	DATE: 30/04/2022
D-10	TIME: 14:09
S/N: #DJ7K759303	Software version: 4.30-2
Sample ID:	C02135616537
Injection date	29/04/2022 19:04
Injection #: 43	Method: HbA2/F
Rack #: ---	Rack position: 3



Peak table - ID: C02135616537

Peak	R.time	Height	Area	Area %
A1a	0.25	26483	116713	6.7
F	0.55	53315	413557	26.6 *
A1c	0.87	4827	51086	5.6
P3	1.52	8143	69171	3.9
A0	1.74	273694	1069141	61.0
A2	3.24	2195	33690	2.3
Total Area:	1753357			

Concentration:	%	mmol/mol
F	26.6 *	---
A1c	5.6	38
A2	2.3	---

In presence of abnormal hemoglobin the use of a single test to establish presumptive identification is inappropriate and second or even third line testing procedures should be in place . Hence , we suggested the patient to go for a parental screening and DNA analysis for the same .

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1. Mondal SK, Mandal S. Prevalence of thalassemia and hemoglobinopathy in eastern India: A 10-year high-performance liquid chromatography study of 119,336 cases. Asian J Transfus Sci.2016:10(1): 105-110. doi:10.4103/0973-6247.175424 n.d.
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1. A rare case of Bisalbuminemia in a 61-year-old male patient.

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SEMINAR CUM HANDS ON-WORKSHOP ON "PRE-ANALYTICAL VARIABLES AND DRY CHEMISTRY PLATFORM IN THE CLINICAL BIOCHEMISTRY LABORATORY"

An offline seminar cum hands on workshop was organized by the faculties of the Biochemistry Department of the College of Medicine and Sagore Dutta Hospital (CMSDH) on the 30th April, 2022 under the ageis of AMBI (West Bengal Chapter) and competent guidance of the legendary teacher and Head of the Department, Dr. Indranil Chakrabarty (Organising Chairperson).The initiative was conceived by just a passing remark in the month of January, but all efforts to organize it were thwarted by the Omicron wave and had to be postponed. Finally, by the end of March, our efforts begun to take shape in the form of invitation to the speakers and participants and 2 research activities for the purpose of presentation. The event was attended by over 50 participants from all over the state (prior complimentary registration was mandatory due to space constraints and Covid Protocol). Dr. Soma Gupta, Secretary of AMBI West Bengal Chapter, announced an award scheme for MD Biochemistry toppers, undoubtedly an exciting impetus to MD examinees. The guest speaker was the acclaimed academician, Dr Kalyan Goswami, who enthralled the participants with his lucid talk on "The sources of uncertainty in Clinical Biochemistry Lab reports with special reference to Pre-analytical variables." An interesting lecture on the principles of Dry Chemistry, the evolution of the instrument and the various techniques now adopted for carrying out the estimation of different parameters was delivered by Mr Biman Kanti Das, from Ortho Clinical Diagnostics. The next two presentations were from our institute. "A comparison of estimation of electrolytes by the Ion sensitive electrodes versus Dry Chemistry" was presented by Dr Sharmistha Chatterjee, Assistant Professor at CMSDH (Organising Secretary). The subject of the talk was the comparison of around 120 samples run on the ISE electrolyte analyser (already in use) and the Vitros 250 –Dry Chemistry Platform (newly installed) in the department , performed over the preceeding two months. The next speaker was Dr. Arindam Sur, Demonstrator at CMSDH, with his presentation on "Direct measurement of Unconjugated Bilirubin as a response indicator of phototherapy in neonatal jaundice in a tertiary care hospital: a longitudinal study." The high point of the event, was of course, the hands-on demonstration of the instrument-"Vitros -250" by application engineers to all the interested participants, in batches in the post lunch session. Everything was explained and demonstrated in detail-from writing the SOP, running calibration and controls on this instrument up to framing of the reports format with the new reference intervals specific to the instrument. The palpable enthusiasm of the participants meeting friends and colleagues together after a pandemic hiatus of about two years proved that there is nothing 'dry" in the world of Dry Chemistry. Yours truly most humbly acknowledges the support of AMBI (West Bengal Chapter), Ortho Clinical Diagnostics and all the participants to make the event a grand success.

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