A 23 year old story of APL (APML)

By

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Around 23 years back a 59 year old Goan male patient ,a well known businessman with political connections was referred to me. His Peripheral Smear and CBC was seen by me and he was diagnosed by me as APL

Acute Promyelocytic Leukemia

The patients and his family wanted to go to a higher center in Mumbai.

I gave them our slides and our report .

I also spoke to the patients son that this leukemia was curable with Vit A derivative Retinoic Acid which had just come in india .

So they proceeded to PD Hinduja Mumbai

At this time a Senior Clinical doctor said to them that this is AML and that the prognosis was bad ,he would die in mumbai or goa despite the treatment.

The family was angry with him

So there were contradictory opinions

1 from me that he would be cured

2 from the senior clinical doctor that he would die.

Our diagnosis was made on the Peripheral Smear showing large number of Promyelocytes with cytochemical Stains Myeloperoxidase and Sudan B .

These days in 2025 the doctors of ACTREC ,Tata Memorial Hospital Dr Syed K Hassan ,Professor ACTREC and Akash Murty PhD Scholar ACTREC.have done clinical research and clinical trials on 134 APL. patients. and developed a simple test to diagnose APL

They also published the details on Hindu on Sunday 6 April 2025.

After this on 6 April 2025 I telephoned the patients son.

He said his father is fine he is now 82 years old

23 years have passed.

In between I used to enquire about him periodically

He was fine

He was cured

He was diagnosed by us in Goa and treated in.PD Hinduja Hospital Mumbai

This is the Success story of the treatment of.APL.

Not all leukemias are lethal.

When we were in 2nd MBBS our Professor of Pharmacology and Dean Dr GJS Abraham took lectures on Chemotherapy .

He made one statement

The treatment of Choriocarcinoma.and Acute lymphoblastic leukemias with chemotherapy are the success stories

Here is one more success story which was discovered later.

So some discussion on APL

APL (APML)

Acute Promyelocytic Leukemia

M3

History First described in 1957 by French and Norwegian physicians

10 to 12 % of AML

Rare

Tata Memorial Hosp gets 50 to 60 cases per year

In USA 600 to 800 cases per year

Aggressive if not treated

Bleeding in the brain and lungs

Genetic mutation

Genetic Fusion

PML gene is on Chromosome 15

RARA gene

(Retinoic Acid Receptor Alpha) gene is on chromosome 17

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Translocation

Part of PML gene fuses with part of RARA gene

Fusion gene

Fusion protein

Not an inherited Genetic mutation

Random

Due to the mutation the cells multiply uncontrollably

Age Median 30 to 40 years

Sex M : F.

1.5 : 1

Ethnicity

Higher in Latin America and Southern European decent

Clinical

Bleeding ,Coagulopathy, thrombosis

Anemia Fatigue weakness , pallor ,dyspnoea,

Infections

B. Symptoms Fever chills ,night.sweats ,weight loss

Pancytopenia

Bicytopenia

Early diagnosis is important

Early treatment is important

Otherwise the patient can die of Bleeding in one week

Investigations

CBC

PS

BM

Flow Cytometry

PCR

Cytogenetics

Treatment

Discovered in 1980s

Highly curable

Complete Remission 90 to 95 %

Cure rate 80 %

Treatment

1 ATRA

All Trans Retinoic Acid

(Vesanoid)

Form of Vit A

2 Arsenic Trioxide

(ATO)

Promyelocytes mature into Neutrophils

Arsenic degrades the PML - RARA Protein

Increase in Caspase activity

Increased Apoptosis

By PS

In 80 % diagnosis is made by.PS

In 20 % WBCs are low

Hypogranular variant

Scant Auer Rods

When Auer Rods are Abundant

Faggot cells

Dr Syed K Hassan and Akash Murty of ACTREC ,TMH

have developed a new test to diagnose APL

CRISPR based test

RAPID - CRISPR

Quick ,Rapid, cheap ,less than 3 hours ,no specialised technology, no specialised equipment

Gene editing

Detects Mutation

It is like a home pregnancy test

100% sensitivity

100% specificity

No false positives

No false negatives

Once Early diagnosis is made

Early treatment

Cure rate is very high

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