

Supportive Care in Acute Promyelocytic Leukemia

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Introduction

- Described by LK Hillestad in 1957 as distinct disease

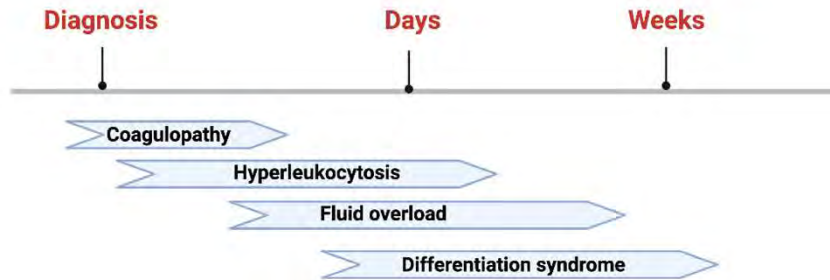
"most outstanding feature was its very rapidly downhill course of few weeks' duration, a white blood cell picture dominated by promyelocytes and severe bleeding caused mainly by fibrinolysis"

- Early years, ~50% death in 10 days with hemorrhage/ sepsis, only 35-45% cured with chemotherapy
- Recently 90-95% CR, >90% OS at 3 years, and <5% death in first 4-6 weeks.
- Supportive care for unique complications during the treatment crucial to improve results

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Complications timeline



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Coagulopathy

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Coagulopathy

- **Common presenting feature**
- Mild mucocutaneous bleeding to severe pulmonary, intracranial bleeding
- 10-20% early hemorrhagic death if untreated

Lab findings

- ↓ Platelets
- ↑ PT/INR, PTT
- ↓ Fibrinogen
- ↑ D-dimer

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Coagulopathy

- **All-trans retinoic acid (ATRA) immediately when diagnosis is suspected**
- Platelet transfusion if $PLT < 30-50 \times 10^9/L$
- Cryoprecipitate if fibrinogen $< 150 \text{ mg/dl}$
- Plasma (FFP) for high PT, PTT
- **Avoid central line insertion, LP or other invasive procedures**

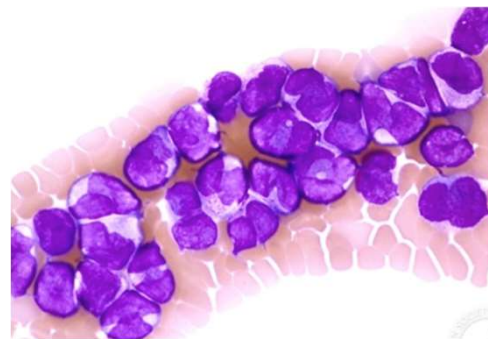
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Hyperleukocytosis

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Hyperleukocytosis

- At diagnosis or few days after starting treatment with ATRA
- Chemotherapy for cytoreduction
 - Hydroxyurea
 - Idarubicin
 - Gemtuzumab
- Avoid leukapheresis due to risk of bleeding



Tallman et al. Blood 2009. From ASH image bank. © ASH

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Differentiation syndrome

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Differentiation syndrome

- **One of the major causes of early mortality**
- **Few days- weeks** after starting treatment
 - Dyspnea
 - Peripheral edema
 - Fever
 - Hypotension
 - Acute renal failure
 - Heart failure
 - Pleuro-pericardial effusion
 - Pulmonary infiltrates

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Differentiation syndrome

- **Steroid prophylaxis can be considered**
- Rule out other causes or complications
 - Fluid overload
 - Infections
 - Diffuse alveolar hemorrhage
 - VTE
 - Heart failure

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Differentiation syndrome

- **Prompt treatment with dexamethasone**
 - 10 mg IV BID at least for 3 days or until symptom resolution, and taper
- Monitor weight, input/output
- Diuresis
- Temporary discontinuation of ATRA and/or ATO if severe

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Fluid overload

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Fluid overload

- **Few days** after starting treatment
- Blood products, fluid supplementation, capillary leakage by endothelial injury
- Hypoxia, Heart failure, Endotracheal intubation, ICU care
- **Monitor input/output and daily weight**
- **Diuretics based on fluid balance, weight gain, and clinical status**

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Conclusion

- Supportive care is crucial for APL, a highly curable leukemia
- Coagulopathy usually present at diagnosis
 - Prompt ATRA and blood product transfusion as needed
- Hyperleukocytosis should be managed with cytoreduction if needed
- Differentiation syndrome can occur after few days to weeks
 - Important to have high suspicion with ATRA +/- ATO use
 - Treat with dexamethasone
- Monitor input/output and weight gain to identify fluid overload

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Thank you !!

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