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NEURO-OPHTHALMOLOGIC MANIFESTATIONS IN ACUTE LEUKEMIA: A SINGLE-INSTITUTION EXPERIENCE

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INTRODUCTION

- Ophthalmologic involvement can be seen in up to one-third of patients with acute leukemia at the time of initial diagnosis
- However, neuro-ophthalmic involvement is relatively rare

AIM

- To evaluate the neuro-ophthalmic manifestations in acute leukemia patients treated at our institution

METHOD

- We performed a single-center retrospective review of 170 consecutive cases of acute leukemia treated at Memorial Hermann Hospital, Texas Medical Center, from January 1, 2013 to December 31, 2022
- The following variables were collected: baseline demographics, type of leukemia, cytogenetic information, hematologic parameters at admission, results of neurologic imaging, and neuro-ophthalmic manifestations
- Main outcome measures were neuro-ophthalmic manifestations and survival

RESULTS

Median age: 40 years (range 20-81) Sex: 5 patients (45%) male, 6 patients (54.5%) female

Note: All patients with leptomeningeal disease received intrathecal chemotherapy

Case	Diagnosis	Neuro-opthalmic features	Timing of neuro-opthalmic involvement	Neuroimaging	Outcome
1	Acute T cell leukemia	Multiple cranial nerve palsies	At relapse	Leptomeningeal disease	Death
2	Philadelphia positive ALL	Bilateral papiledema from pseudotumor cerebri (PTC)	At diagnosis	Optic sheath with slight distension	Alive
3	AML	Blindness from optic nerve palsy	At relapse	2 cm mass in the right cerebellar hemisphere 1.5cm lesion demonstrating diffusion restriction along the left external capsule	Death
4	AML	Nystagmus, 6th nerve palsy	At relapse	Leptomeningeal disease	Death
5	AML	Bilateral papiledema from PTC Bilateral facial nerve palsies	At diagnosis	Tortuosity of the optic nerves bilaterally with papiledema, inferior tonsilar herniation, enhancement of the leptomeninges	Alive
6	AML	Bilateral papiledema from PTC Retinal hemorrhage	At diagnosis	Bilateral papiledema and dilated bilateral optic nerve sheaths	Alive
7	AML	Bilateral facial nerve palsies	At relapse	Asymmetric enhancement of the intraosseous facial nerves, consistent with neuritis	Death
8	ALL	CN 3 and 6 nerve palsies from leptomeningeal disease	At relapse	Leptomeningeal disease	Death
9	APL	Retinal hemorrhage from thrombocytopenia and coagulopathy	At diagnosis	Embolic stroke	Alive
10	T-ALL	Multiple cranial nerve palsies	At relapse	Negative imaging	Alive
11	AML	Retinal hemorrhage from thrombocytopenia and coagulopathy	At diagnosis	Negative imaging	Death

CONCLUSIONS

- Neuro-ophthalmic manifestations may occur at the time of initial leukemia diagnosis or at relapse
- Isolated or multiple cranial nerve palsies can manifest with or without leptomeningeal disease
- Patients with neuro-ophthalmologic manifestations from relapsed leukemia have a poor prognosis

REFERENCES

1. Alrobaian MA, Henderson AD. Neuro-Ophthalmic Manifestations of Acute Leukemia. J Neuroophthalmol. 2021 Dec 1;41(4):e584-e590. doi: 10.1097/WNO.0000000000001071. PMID: 32868572.

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