Purpose

- IIH is raised intracranial pressure (ICP) in the absence of an identifiable cause, commonly affecting young obese women.
- There likely exists a relationship between IIH and anemia; however, this remains controversial.
- Several reports have documented IIH in anemic, non-obese individuals that resolved with treatment of anemia alone.

Objectives of this study:
1. Compare the prevalence of anemia in IIH patients and age- and sex-matched neuro-ophthalmology controls.
2. Compare the initial and final visual outcomes in IIH patients with and without anemia.

Methods

Participants: 123 consecutive IIH patients and 113 age- and sex-matched neuro-ophthalmology controls recruited from tertiary neuro-ophthalmology clinics.

Data Collection:
- Complete blood counts (CBC) collected within 6 months of initial presentation and 3 months final follow-up.
- Anemia defined as: Hemoglobin <120g/L women; <130g/L men.
- Visual function (logMAR visual acuity, Humphrey Mean Deviation (MD), OCT RNFL and GCIPL measurements).

Results

Higher Prevalence of Anemia in IIH Patients versus Controls

<table>
<thead>
<tr>
<th>Prevalence of Anemia</th>
<th>IIH</th>
<th>Control</th>
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OR: 2.48, 95% CI 1.19 – 5.16, p=0.01

More IIH patients had severe anemia (Hemoglobin<80g/L)
- 17.9% in IIH versus 0% in controls.

At presentation, IIH patients with anemia had more mild-to-moderate visual impairment and worse visual fields than non-anemia patients
- % eyes with logMAR 0.3 – 1: 14.3% anemia vs. 3.7% non-anemia, p=0.01.
- Humphrey MD: -5.7dB ± 8.1 anemia vs. -3.4dB ± 4.2, p=0.048.

At follow-up (median 47.4 weeks, IQR: 20.1 – 91.8):
- Visual acuity showed comparable improvement between IIH patients with and without anemia (p=0.10).
- Visual fields still worse in anemia patients (Humphrey MD: -5.6dB ± 6.4 anemia vs. -3.2dB ± 5.7, p=0.045).

Conclusion

- Anemia is more common among IIH patients than neuro-ophthalmology controls.
- Most anemia in IIH patients is mild, but can be very severe as seen in approximately 18% of IIH patients with anemia.
- The exact etiological role of anemia in IIH is unclear; iron-deficiency anemia is considered a hypercoagulable state and may lead to increased venous pressure and raised ICP from decreased cerebrospinal fluid resorption.
- Anemia may also be a marker of poor overall health in IIH patients, and related to lower socioeconomic status.
- The detection of papilledema offers an opportunity to screen for anemia in IIH patients, especially since it may influence the visual outcome.
- We suggest CBC be obtained in patients with papilledema.

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Author Disclosures: None.