

## Main Message

- Anemia is more common in idiopathic intracranial hypertension (IIH) patients than in neuro-ophthalmology controls
- Anemia may influence visual function in patients with IIH
- A complete blood count (CBC) is a widely available, low-cost test that should be obtained in all patients with papilledema

## 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

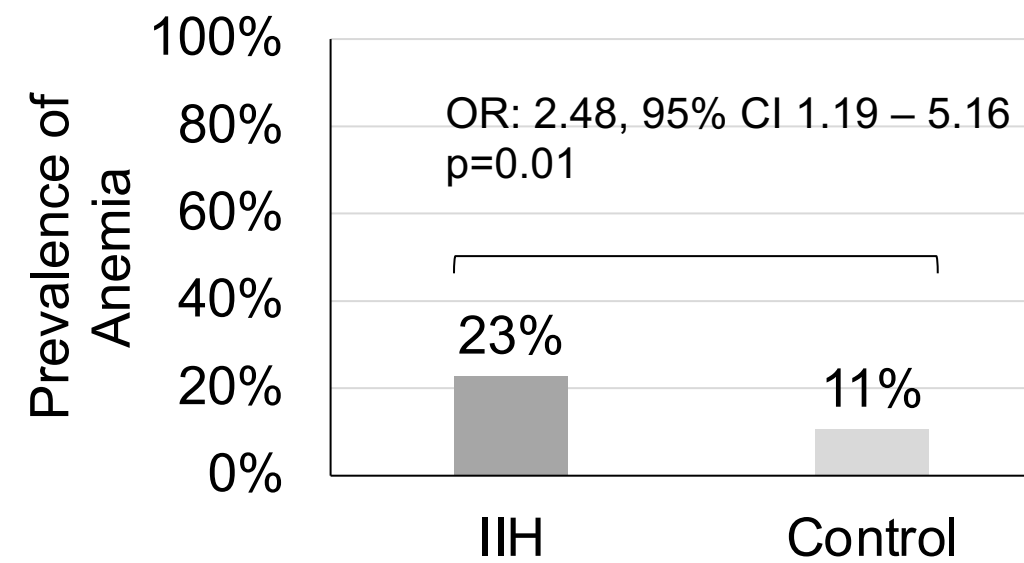
**Participants:** 123 consecutive IIH patients and 113 age- and sex-matched neuro-ophthalmology controls recruited from tertiary neuro-ophthalmology clinics

### 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



### 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

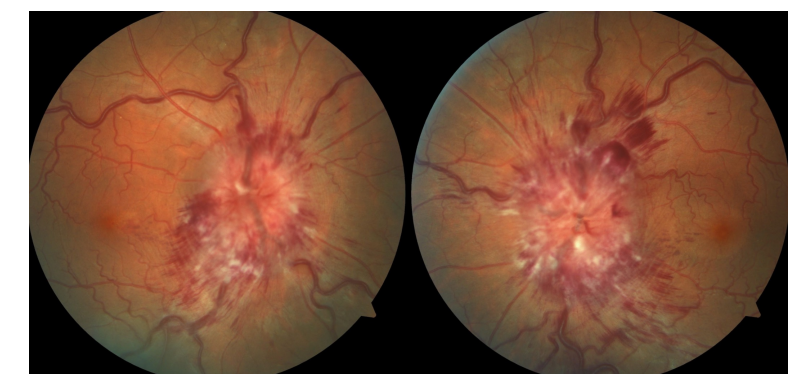
- % eyes with logMAR 0.3 – 1: 14.3% anemia vs. 3.7% non-anemia, p=0.01
- Humphrey MD: -5.7dB ± 8.1 anemia vs. -3.4dB ± 4.2, p=0.048

### 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



Example image of papilledema

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