Investigating the Genetics of Chronic Intractable Migraine with Reactive Hypoglycemia

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Background

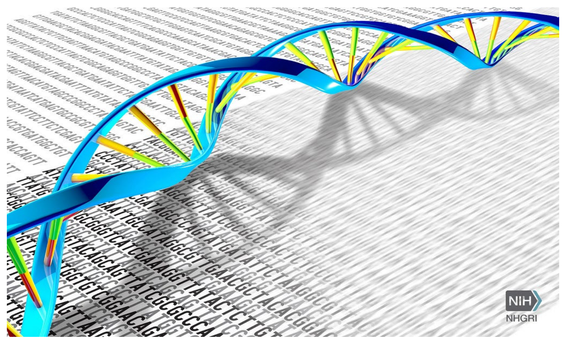
- Migraines affect a significant portion of the population, with intractable migraines resistant to treatments in 5 – 30% of cases.
- Limited knowledge about intractable migraines, especially compared to other migraine types.
- Reactive hypoglycemia is common among individuals with chronic intractable migraines, suggesting a metabolic link.
- Genetic studies show a potential connection between migraines and metabolic abnormalities, but previous studies lack specificity in factors such as severity and frequency.

Methods

- Pedigrees are being collected from individuals with intractable migraines and reactive hypoglycemia treated at the Migraine and Neurological Rehab Center.
- Whole genome sequencing (WGS) will be utilized to detect all variant classes including LEPR variant (rs751167)

Future Directions

- Develop a post-prandial reactive hypoglycemic biobank



Familial prevalence of chronic intractable migraines with possible metabolic link

Results

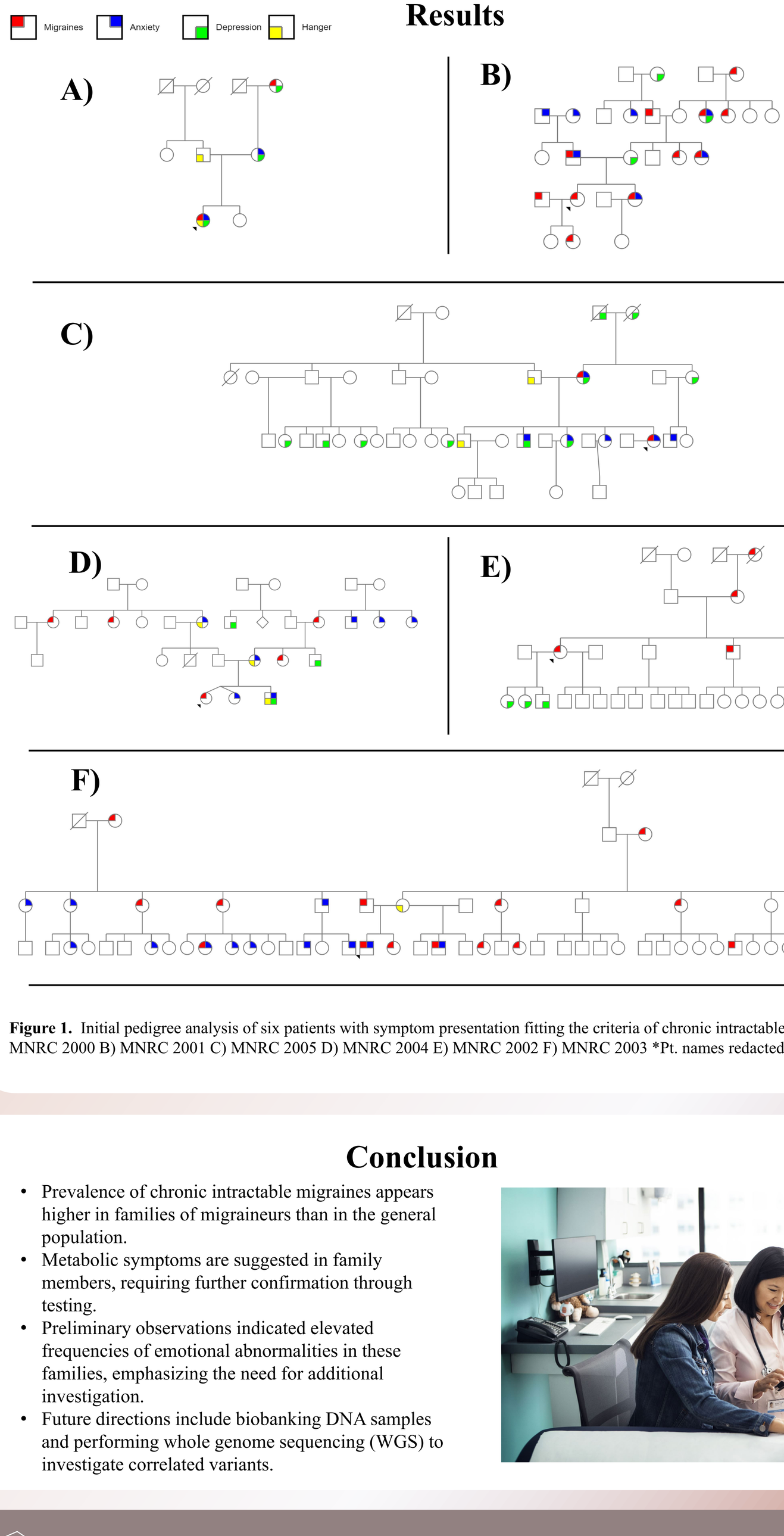


Figure 1. Initial pedigree analysis of six patients with symptom presentation fitting the criteria of chronic intractable migraines. A) MNRC 2000 B) MNRC 2001 C) MNRC 2005 D) MNRC 2004 E) MNRC 2002 F) MNRC 2003 *Pt. names redacted and relabeled*

Conclusion

- Prevalence of chronic intractable migraines appears higher in families of migraineurs than in the general population.
- Metabolic symptoms are suggested in family members, requiring further confirmation through testing.
- Preliminary observations indicated elevated frequencies of emotional abnormalities in these families, emphasizing the need for additional investigation.
- Future directions include biobanking DNA samples and performing whole genome sequencing (WGS) to investigate correlated variants.

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