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**Background**

Immunoglobulin A nephropathy (IgAN) is amongst the most prevalent glomerular diseases with a 1 in 1,400 chance of being diagnosed in one’s lifetime in the United States. The deposition of modified IgA (IgA1) in the kidney’s glomerular mesangium combined with an autoimmune response to these modified proteins leads to an impaired filtration rate, high blood pressure, and significant protein loss through urine. Eventually these symptoms culminate in permanent kidney damage and end-stage renal disease if left undiagnosed. The future steps of treatment involve ACE inhibitors and immunosuppressants as prescribed a nephrologist until possible kidney dialysis when symptoms worsen. Currently, the only method of verifying the presence of IgAN is to perform a biopsy on the suspected patient’s kidneys.

Internationally, there appears to be some population differences in the prevalence of IgAN, with Asian countries occurring at twice the incidence of Europe and four times the incidence rate of North America. IgAN is also twice as prevalent in males than in females. Most recently, familial forms of the disease have been reported, indicating that there is some genetic component contributing to the disease formation. However, there is such wide variation in the degree of urinary and nephrological abnormalities, that whatever genetic factors are involved, the interactions are similarly varied in different population subgroups.

**Proposal**

**Hi, can we research what data we actually plan to use for this? I dont actually know how any of the methods that we used works, so double check this especially to confirm.**

Our proposal is to perform a GWAS on IgAN positive patient data compared with control patient data to discover loci that have a strong possibility of contributing to IgAN. We will perform this analysis in a similar method outlined by Isabel Beerman et al. in their 2007 paper on the exact same data set. Furthermore, we will evaluate the likelihood of gene association using Pearson correlations and then Benjamini-Hochberg to check the significance of our results.

(<https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE44974>)

**Methods -**

Probably not doing this anymore, check Nawaf’s e-mail for current draft!