The Association for
Clinical Biochemistry &
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Better Science, Better Testing, Better Care

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Scientific Affairs Committee

Scientific Scholarship Update Report

Name of Scholar: Danja SCHULENBURG-BRAND…… **Date of Report:** 30/09/2014

Title of Project: A pilot study to identify genetic factors that may be associated with increased risk of acute neurovisceral attacks in patients with Acute Intermittent Porphyria.

Summary of work completed to date (400 words max):

Aim:

1. To gain experience in using linkage analysis as a genetic mapping method.
2. To use linkage analysis to collect pilot data on the location of possible modifier genes in families with confirmed AIP (and known *HMBS* gene mutations) that could contribute to the genetic risk of developing an acute attack.

Project progress:

1. Literature review- Complete
2. Study population selection- Complete
3. DNA extraction- Complete
4. SNP Microarray assay- Complete
5. Linkage analysis-partially complete, initial results available, awaiting detailed analysis data from statistician

Progress against aims:

1. Aim one achieved, we are more familiar with this methodology and have built up research relationships with other departments with the appropriate equipment in order to proceed to a bigger future study
2. Aim two achieved: 3 chromosome areas have been identified associated with the clinical phenotype warranting further investigation as these areas may contain confounder genes contributing to the risk of acute attacks of porphyria.

Further work and next steps:

1. Identifying the genes in the chromosomal areas identified to see if any are perhaps known to be involved in the porphyria metabolic pathway, i.e. prioritising which genes need further study
2. Planning of a future prospective study based on these pilot results. The next study will include a bigger cohort and more accurate phenotyping.
3. Writing up of results and publication.

Briefly describe any positive impact for patients: From our preliminary results it looks like we have identified chromosomal areas on three different genes which are significantly associated with the AIP phenotype, pointing to locations of possible genetic confounders in symptomatic AIP.
If genetic confounders can be identified, we may alter/adapt our clinical counselling of mutation positive but asymptomatic family members with regards to e.g. avoidance of precipitants such as certain drugs and alcohol.

List any citations for Publications arising out of the work:
None yet, we await our final results, but plan to present the project at the ACB Wales membership awards in November in Wales.

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