NIHR/BAD Research Taster Bursary Report
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From January-March 2011, the NIHR/BAD Research Taster Bursary supported my work with the Arthritis Research UK Epidemiology Unit, University of Manchester, undertaking research into the genetics of early-onset psoriasis. Throughout the three months, I attended the unit's weekly programme of academic activities and presented papers relating to the genetics of psoriasis and psoriatic arthritis at a journal club.

The work undertaken was my first experience into dermatological research and has furthered my interest in the genetics of complex diseases, a subject area I was introduced to during my academic Foundation Programme. Complex disease genetics is a rapidly evolving field and the area in which I believe tremendous advances impacting upon patient care will be made in my working lifetime.

My primary project was spent investigating the genetic overlap of early-onset psoriasis with other autoimmune diseases. There is evidence that all autoimmune diseases share common underlying molecular pathways and that systematically searching for known autoimmune variants in related diseases can elucidate new genetic associations. I assisted with a study searching for 20 known autoimmune variants in a cohort of patients with early-onset psoriasis, finding a novel association with IL-2/IL-22. I presented these findings in a poster at the British Society for Investigative Dermatology.

Given that there is an increased prevalence of rheumatoid arthritis in patients with early-onset psoriasis, I subsequently investigated 20 single nucleotide polymorphisms known to be associated with rheumatoid arthritis in a cohort of patients with early-onset psoriasis (onset before age 40y). I used PLINK software to test case-control association and modeling and undertake quality control and power calculations using Quanto and the Online Genetic Power Calculator. We confirmed the association of early onset psoriasis with *REL*. Although the findings require replication in a larger independent cohort of subjects, our work suggested that similar exploration of autoimmune loci and fine-mapping of such regions may provide further insight into the genetics and molecular pathophysiology of psoriasis.

The NIHR/BAD bursary allowed me to present our findings at the European Society for Dermatological Research meeting in Barcelona (September 2011) and I am preparing our work for publication in a major dermatology journal. Furthermore, following the literature search performed prior to the above work, I will be contributing to a contemporary review of the genetics of psoriasis.

I am grateful to the National Institute of Health Research and British Association of Dermatologists for affording me the opportunity to spend a period of time in research in the University of Manchester and for supporting expenses incurred during this time. I am indebted for the inspiration and support offered by many members of the Arthritis Research UK Epidemiology Unit, particularly my supervisors. The experience has encouraged me to apply for a higher degree training fellowship next year and spurred my ambition to become a Dermatology Clinical Academic.