Master student,
A master's project available in a candidate gene association study in paediatric oncology and pharmacology.

2016

Project description

Busulfan and cyclophosphamide are commonly used components of myeloablative conditioning regimen before hematopoietic stem cell transplantation in paediatric patients. There exists interindividual differences in the metabolism, plasma levels of these two drugs and hence variability in the response or toxicity to the treatment. The variability in the response could be due to the differences in the effectiveness of DNA repair mechanisms which could rectify the damage caused by busulfan and cyclophosphamide. Genetic variations in the genes coding for drug metabolizing enzymes and DNA repair proteins might contribute to the variability in their activity. We are investigating the relation between the selected genetic variants in these candidate genes and clinical response to busulfan and cyclophosphamide in a cohort of 200 patients who received a conditioning regimen with busulfan and cyclophosphamide.

During this project, the student is expected to analyse the relation between some of the genetic variants in candidate genes and clinical outcome to treatment. He/she is expected to gain training in primer design, PCR-RFLP (polymerase chain reaction-restriction length polymorphism), Allele specific PCR, Gel electrophoresis, Real time PCR, Statistical analytical tools, Bioinformatics tools in genetic association studies and study design for candidate gene association studies.

Duration: To be determined – Contact: marc.ansari@hcuge.ch

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