Molecular Basis of Elevated Foetal Haemoglobin in Haematological Malignancies

Hereditary Persistence of Foetal Haemoglobin (HPFH) is when individuals exhibit a higher than normal (> 2%) foetal haemoglobin (Hb F). HPFH has been widely investigated for its role as a model to understand better Hb F regulation and control. Thus far three important genes appear to regulate this control and include the *MYB* proto-oncogene, *KLF1* and *BCL11A* genes. Individuals with certain types of haematological malignancies such as Congenital Dyserythropoietic Anaemia (CDA), Multiple Myeloma and other Myeloproliferative disorders are known to exhibit high levels of Hb F and therefore HPFH, though the exact mechanism of how this is achieved is not completely understood. Hb F profiles of patients suffering with haematological malignancies and what therapy is taken for their disease are being carried out. The correlation between disease, drug type and Hb F level will be determined for each patient and test whether this same therapy is responsible for the elevated levels of Hb F and to what extent. The results from this study are expected to provide additional information on how Hb F responds to external compounds and drugs. Finding a way to elevate high levels of Hb F in patients suffering from β thalassaemia major would be of great benefit and help treat their symptoms. This will enable the possibility to render them transfusion independent and improve the patient’s medical and social life.

References