ETM/426 - Predicting therapeutic response to teriparatide therapy in osteoporosis by genetic profiling

Osteoporosis is a common disease associated with low bone mass and an increased risk of fragility fractures. Since substantial bone loss has already occurred by the time osteoporosis first presents, anabolic agents such as teriparatide (TPTD) are recommended in the treatment of severe osteoporosis. Randomised trials and observational studies have shown that TPTD prevents vertebral fractures better than oral bisphosphonate therapy, but treatment costs for TPTD are high and the response is variable. Identification of markers to response to TPTD would be highly advantageous in order to target treatment more effectively. In a pilot genome-wide association study of 162 patients, we identified several loci that predicted the response of spine BMD to TPTD therapy including one genome-wide significant locus. Here we propose to replicate and extend this study with the aim of identifying validated markers of TPTD response that could be used to better inform treatment decisions in clinical practice.