Genetics of Osteoporosis in the Maltese Population

Research conducted by some members of the Department of Applied Biomedical Science, headed by Professor Angela Xuereb, has contributed to novel gene discovery in the field of genetics of osteoporosis in postmenopausal women caused by low bone mineral density. A region on chromosome 11p12 was linked to a highly penetrant form of osteoporosis in an extended Maltese family (Vidal et al, 2007). Further work identified CD44 variants that influence gene splicing (Vidal et al, 2009). This identification of genes contributing to the debilitating disease is crucial in identifying susceptible individuals, thus preventative measures can be taken at a younger age, for example, increased physical activity and increased calcium and vitamin D intake. Also, this research aids in the development of new treatments and medications.

A collection of samples and data is currently being set up for the study of osteoporotic fractures, a common cause of morbidity in older adults. This will enable research to be carried out on the genetic causes of fractures that are independent of bone mineral density, thus improving current prediction models of fracture risk based on bone mineral density.

Efforts to identify genetic markers associated with osteoporotic fractures are warranted to minimise this devastating health problem, especially prevalent in the elderly community. More effective treatment and prevention strategies can be developed and improved testing methods can be introduced. This research can also be used to educate the community so that “in the future as many people as possible have stronger bones in later life”.

References
