Bisphosphonates and osteoporosis: which therapeutic agent is best?

Bisphosphonates have been used for the treatment of osteoporosis in post-menopausal women for years and have been shown to be effective in reducing the risk of fracture in this patient group. In addition, they have a reasonable safety profile. Several bisphosphonates are available to the physician but vary according to their pharmacological profile. Choosing the most appropriate agent represents a difficult decision for clinicians who need to balance patient satisfaction with overall clinical outcomes. The review by Rizzoli in this month’s QJM attempts to guide us in this respect with the specific aim of comparing the effectiveness of four bisphosphonates (alendronate, risedronate, ibandronate and zoledronic acid) in terms of therapeutic outcome (i.e. reduction of fractures), safety, mode of action and patient acceptability. While acknowledging the fact that overall these drugs have an acceptable safety profile, adverse effects are possible. These include gastro-intestinal inflammation, acute phase reactions (arthralgia, malaise), atypical fractures, atrial fibrillation and rarely osteonecrosis of the jaw. The conclusion from the review is that all of the four drugs should be considered as first line choices for the prevention of osteoporosis but each has idiosyncratic adverse reaction issues that need to be considered. We are reminded that the parameters of evidence based medicine in this circumstance should be balanced with the need for clinical judgment that takes into account the needs and views of individual patients.

Phytosterols and lipid reduction

There is yet another review this month on the subject of lipid reduction and for a change the therapeutic agent under discussion is not a statin. Are you familiar with the term “phytosterol” - you should be as they are now very commonly available in such foods as vegetable oils, cereals and yoghurts. Phytosterols are also known as plant sterols and are important constituents of plant cell membranes. Their cholesterol lowering properties have been known for decades but their potential role in the reduction of abnormally high lipid levels has received more attention in recent years. An ordinary diet contains sterols but at a level that is unlikely to reduce lipid levels. A daily intake of 1.5 grams per day of sterols is needed to lower serum cholesterol and hence technology has enhanced their concentration in various foods. It is agreed that sterols effectively reduce lipid levels but does this result in any clinical benefit such as reduction in cardiovascular disease? The review by Gupta et al critically reviews the effectiveness of phytosterols with particular reference to lowering of lipid levels, reduction in adverse cardiac events, and their safety and potential use with other agents. The conclusion is that a daily dose of 2.3 grams of stanol will result in a 15% reduction in lipid level. Furthermore, they have a role in dylipidaemic patients when used along with statins. No major safety concerns have been raised but long term chance of harm following the persistent use of plant sterols has as yet to be definitively established. There is a rare autosomal recessive disorder where excessive accumulation of sterols may occur as a result of a reduced ability of liver to excrete them. Considering the linear relationship between lipid levels and cardiovascular disease there is no direct evidence available that suggests that the use of plant sterols is associated with the reduction of cardiovascular disease. However, the authors argue that there is indirect evidence to support the impact of phytosterols in this respect. The Mediterranean diet is associated with a significant reduction in the risk of adverse coronary events and this diet is rich in the food products with significantly high phytosterols concentration such as nuts, fruits and legumes. In summary, sensible use of phytosterols is likely to aid
many dyslipidemic patients who experience difficulties in achieving adequate reduction of lipid levels. Further research is needed to establish the effect of plant sterols on the cardiovascular disease.

**Research in Clinical Practice**

Next month the Annual Scientific Meeting of the Association of Physicians of Great Britain and Ireland will be held in Oxford. During the meeting scientific papers representing the output of original research will be presented and discussed. In addition, distinguished invited speakers will share their expertise and knowledge. The standard will be high as usual and the output from the event will be published in the journal. In this month’s issue I am pleased to publish the proceedings of a different academic event that took place in Oxford. In this case the meeting was organised by and directed towards medical researchers in the very early years of their careers. In fact the intention was to allow academic foundation doctors (i.e. within two years of qualification) to present their research to a critical audience. The standard of presentation was impressive bearing in mind the fact that the participants were in effect at the start of their academic careers. Some years ago there was widespread anxiety that academic medical careers were in decline and that talented young doctors were not inclined to follow this pathway. It would seem that this declining trend has been reversed.

Michael Bannon  
*Editor, QJM*