Improving medication adherence for patients with osteoporosis

The role of the community pharmacist
**Highlights**

- Osteoporosis is a global health concern and affects 200 million people worldwide, including both men and women.
- The disease is characterised by a decrease in bone mineral density that increases the risk of fragility fractures, morbidity and mortality.
- There are many risk factors for developing osteoporosis, some of which include old age, smoking, alcohol and prolonged corticosteroids use.
- Antiresorptive medications are used for protecting patients against osteoporotic fractures; however, medication adherence to these drugs remains challenging.
- Patients that have a poor understanding of their medications, concerns about side effects and an underestimated view of their fracture risk potential are less likely to adhere to their osteoporosis treatments.
- Community pharmacists may support patients through strategies such as compliance aids, face-to-face counselling and regular medication reviews that address practical treatment barriers.
- Additionally, electronic drug information databases may support pharmacists in managing patients with adherence issues through the provision of education resources and drug information to support treatment evaluation.

**Osteoporosis overview**

Osteoporosis is a prevalent global health concern and affects an estimated 200 million people worldwide, including both men and women. It is characterised by decreased bone mineral density that increases the susceptibility of the bone to fragility fractures. Fragility fractures are a common cause of hospitalisation and may lead to greater costs, increased morbidity and mortality. Once a patient suffers a fracture they are 86 percent more likely to develop further fractures that will result in poorer health outcomes.

Some of the risk factors for osteoporosis include genetics, smoking, prolonged use of corticosteroids, increased use of alcohol, physical inactivity and a sedentary lifestyle. Age is also another important risk factor, with 75 percent of osteoporotic fractures—including hip, spine and distal forearm—occurring in people aged 65 or older. Additionally, osteoporosis is more common in women, and 61 percent of total fracture cases occur in this patient group.

**Barriers to medication adherence**

Antiresorptive therapy remains the strategy for protecting patients against osteoporotic fractures. Oral bisphosphonates, intravenous bisphosphonates, raloxifene, denosumab, teriparatide and strontium ranelate are typically used for the treatment of osteoporosis in conjunction with calcium, vitamin D supplementation and lifestyle advice.

Medication adherence plays an important role in the management of osteoporosis and in reducing the risk of developing fragility fractures. Patients with a poor understanding of their medications, concerns about side effects and an underestimated view of their fracture risk potential are less likely to adhere to their osteoporosis treatments. In addition, evidence suggests that half of patients that receive treatment do not take their medications as prescribed, while 47 percent of patients discontinue therapy within the first six months of initiation.
Strategies to overcome medication adherence barriers

Community pharmacists should ensure that patients get the most out of their osteoporotic treatment regimes. Strategies such as compliance aids—namely electronic reminder systems and face-to-face opportunities to educate patients about osteoporosis, fracture risk and the importance of therapy—may help to improve treatment adherence by addressing misconceptions and beliefs\(^2,3\).

Furthermore, community pharmacists are generally positioned to identify and manage practical treatment barriers that may limit adherence. A case in point can be seen with oral bisphosphonates, which are commonly used as a first-line treatment option for osteoporosis\(^6\). Immediate-release oral bisphosphonates typically demonstrate poor oral bioavailability and can interact with other medicines or compounds present in food, such as calcium or dairy products\(^3\). Bisphosphonates are therefore usually given 30 minutes prior to any food or drink to optimise absorption\(^3\).

Patients may find it challenging to consistently take immediate-release bisphosphonates daily, 30 minutes before food or drink, and this could be a reason for non-adherence to the therapy\(^7\). Pharmacists may work with patients to overcome such obstacles by suggesting alternative therapeutic options in line with the patient’s preferences. For instance, if a once-daily bisphosphonate is causing a patient trouble, then switching to a once-weekly enteric-coated bisphosphonate could be beneficial\(^3\).

Another reason for poor patient adherence to antiresorptive medication stems from the anxiety of experiencing side effects\(^2,3\). A study conducted by the US National Osteoporosis Foundation has shown that 79 percent of 853 respondents report the fear of side effects being a central reason for not taking their antiresorptive medications\(^2\).

Indeed, poor adherence for patients taking bisphosphonates might become apparent if concerns such as the risk of developing osteonecrosis of the jaw (ONJ) arise\(^7\). Pharmacists may support patients by setting realistic expectations about the likelihood of drug side effects occurring by having an open discussion about the risk-benefit profiles of such medications.

In the case of bisphosphonates, counselling advice could focus on highlighting the relatively low risk of developing ONJ for patients taking oral bisphosphonates when compared to intravenous bisphosphonates\(^7,8\). Indeed, estimates suggest that the risk of developing ONJ in patients taking oral bisphosphonates is one in 100,000 people per year; a figure that could reassure many\(^7,8\). Pharmacists may also use best-practice advice such as highlighting what to do if one suspects ONJ, as well as the importance of maintaining good dental hygiene and oral care, to limit the risk of developing it\(^8\). Effective education may ensure patients are more informed about their medication’s risks and benefits, which could in turn have a positive impact on their adherence.

Furthermore, pharmacists may utilise electronic drug information databases as a mechanism for providing patients with education resources and communicating with patients about their health and medications in a way that is easy to understand. Similarly, electronic drug information databases could be used by pharmacists to optimise treatment for patients with apparent adherence problems through supporting the evaluation of dosing, formulation choice, precautions, adverse effects and monitoring.

Conclusion

Medication non-adherence in osteoporotic patients represents a problematic challenge that can lead to poorer overall health outcomes in this patient group. Notwithstanding, pharmacists that can identify patients with adherence issues may be able to support patients in overcoming practical treatment barriers through compliance aids and education, and by recommending alternative treatment approaches.

Additionally, the use of electronic drug information systems may support pharmacist-led drug evaluation and education strategies to holistically help support patients who may be non-adherent to their clinical management plans. We believe community pharmacists are ultimately well-placed as a first port of call to holistically address potential adherence issues in patients with osteoporosis.
References


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Jay Borkhataria, MRPharmS, Associate Marketing Specialist, IBM Software Sales. Borkhataria is a hospital pharmacist by trade and has spent time working as a clinical researcher within the field of epilepsy. He earned his Masters in Pharmacy with specialisations in the molecular basis of disease, HIV and oncology. Borkhataria also has a background in business management and has experience working in commercial pharmaceutical marketing.

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