

# **Secondary Prevention of Osteoporosis in the Women's Health Initiative: Another Treatment Gap?**

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## **Background**

Approximately 9 million osteoporotic fractures per year occur globally, most of which are observed in postmenopausal women. The incidence of fractures is expected to rise as the population ages and lives longer. Osteoporotic fractures are associated with high morbidity, mortality, and cost. We investigated the rates of treatment of osteoporosis in the Women's Health Initiative (WHI) and identified patient characteristics associated with higher or lower likelihood of receiving appropriate osteoporosis treatment.

## **Methods**

We used SAS statistical software to perform a post hoc analysis of the WHI clinical trials data for participants who reported new diagnosis of osteoporosis and/or a new fracture while enrolled in the study. Visits prior to and immediately subsequent to the first fracture event or diagnosis of osteoporosis were evaluated for medication use. A logistic regression was conducted to investigate which variables were most predictive of a woman taking a medication to treat osteoporosis after a fracture and/or a diagnosis of osteoporosis.

## **Results**

Our analytic cohort included 17,803 women who reported a new diagnosis of osteoporosis and/or a new fracture in the interval between enrollment and their final WHI visit. Of the 13,990 participants who had medication data available for the first study visit after the diagnosis of osteoporosis or fracture, only 21.6 % reported taking an appropriate medication to treat osteoporosis and prevent future fractures. Using multivariate analysis, we found that the following patient characteristics had a statistically significant association with higher likelihood of osteoporosis pharmacotherapy: higher daily calcium intake, diagnosis of osteoporosis alone or both osteoporosis and fracture compared to diagnosis of fracture alone, Asian or Pacific Islander race (compared to white/Caucasian race), higher income, and hormone replacement therapy (past or present). Conversely, the following characteristics were associated with lower likelihood of secondary osteoporosis prevention: Black/African-American race (compared to white/Caucasian race), BMI of 30 or greater (compared to BMI of 18.5-24.9), current tobacco use (compared to past use or lifetime nonusers), and history of arthritis.

## **Conclusion**

Despite well-established guidelines for secondary fracture prevention in postmenopausal women with osteoporosis or history of fractures, pharmacotherapy was suboptimal in WHI participants who reported an incident fracture and/or new diagnosis of osteoporosis during the study. Although some of these patients may have had contraindications to treatment, this explanation is unlikely to account for the majority who were not on treatment after diagnosis of fracture or osteoporosis. Initiation of osteoporosis treatment for fragility fracture may represent an opportunity to improve

patient care. Our findings can inform future studies as well as development of interventions and programs aimed towards secondary prevention of osteoporosis, fractures, and associated morbidity and mortality, and help close the gap in post-diagnosis intervention.