

Trends in Bisphosphonate Initiation Within an Integrated Healthcare Delivery System

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Examination of osteoporosis treatment patterns within healthcare systems should consider the effect of temporal trends in disease management. In Kaiser Permanente Southern California (KPSC), a large-scale osteoporosis program was established in 2002 to reduce fracture rates by 1) increasing bone mineral density (BMD) screening in women 65 years or older and those older than 50 years with fracture and 2) increasing bisphosphonate (BP) treatment for those with osteoporosis by BMD criteria and those with fracture.¹ In 2008, osteoporosis metrics, quality measures, and changes in disease management were promulgated nationally, focusing on women 65 years or older and those at higher fracture risk.²⁻⁴

In this context, we examined characteristics of new oral BP initiators over time, including age, prior fracture status, and BMD findings. Of the 94,073 women 50 years or older who initiated oral BP within KPSC from 2004 to 2012, 65% were 65 years or older and 21% had a fracture diagnosis within the 5 years prior to BP initiation.

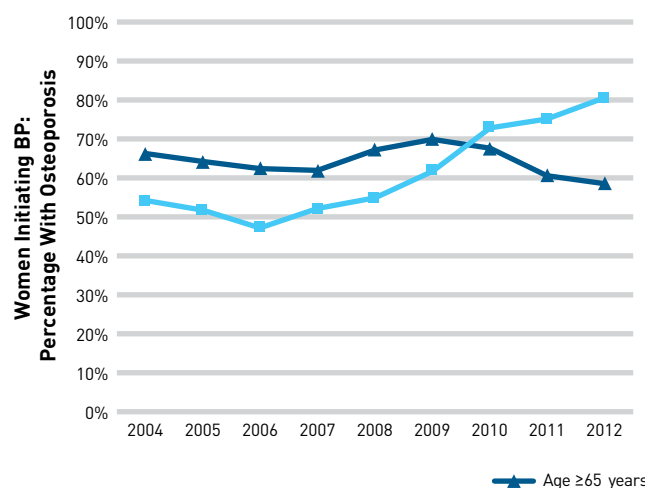
There were 75% with accessible BMD data within 2 years of BP initiation, of whom 62% had osteoporosis based on the lowest T-score (≤ -2.5) of the hip or spine.

Examining time trends among women who initiated BP and had available BMD data, we found that during 2004 to 2007, approximately half of the women younger than 65 years had osteoporosis by BMD criteria (47%-54%); the remaining 43% to 50% had osteopenia and 2% to 3% had normal BMD. In contrast, during 2008 to 2012, the proportion of women younger than 65 years with osteoporosis by BMD increased from 55% to 81% (Figure A). This temporal trend was not evident among women 65 years or older who initiated BP, of whom about two-thirds had osteoporosis by BMD in both the earlier (62%-66%) and later (59%-70%) time periods.

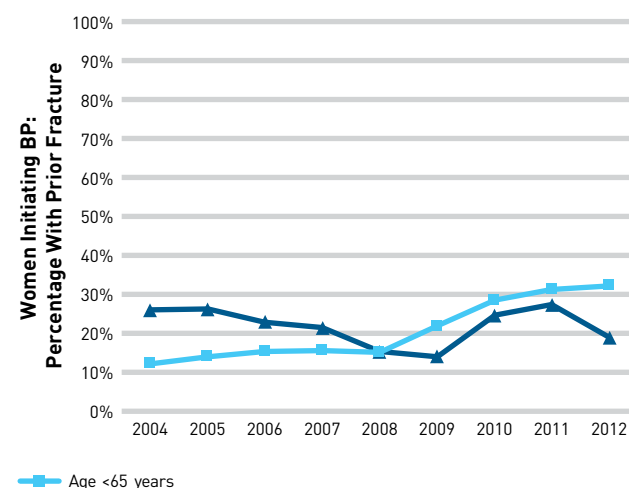
Initiation of BP among younger women (<65 years) was notable for a progressively increasing proportion with prior fracture, from 15% in 2008 to 32% in 2012 (Figure B). This focus on treatment of higher-risk women was reflected in a declining proportion of

FIGURE. Percentages of Women Initiating Bisphosphonate (BP) in 2004-2012

A. Percentage With Osteoporosis by Bone Mineral Density



B. Percentage With Prior Fracture



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women younger than 65 years (42% in 2007 to 21% in 2012) among those without prior fracture.

Similar observations were seen in Kaiser Permanente Northern California,⁵ a healthcare delivery system equal in size to KPSC but providing care independently, where a regional osteoporosis program was not implemented until 2008. For both health plans, major shifts toward treatment of older, rather than younger, women were observed beginning in 2008.⁵

In summary, beginning in 2008 there was a marked shift toward treating higher-risk subsets among younger postmenopausal women, including women with prior fracture and those with osteoporosis by BMD, and away from women at lower risk (younger age, osteopenia, and no prior fracture). Health plan attention toward assessment of integrated fracture risk and national quality metrics disseminated in 2008^{2,3} likely contributed to these observed patterns. These findings highlight the importance of considering changing initiatives and guidelines that may impact temporal trends and patterns of BP initiation within integrated healthcare systems. ■

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