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CORR Insights®: A Resident-led Initiative Improves Screening and Treatment for Vitamin D Deficiency in Patients with Hip Fractures

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Where Are We Now?

In their study, Lansdown and colleagues describe a program in which residents were incented to assess 25-hydroxyvitamin D levels during acute hospitalizations of patients older than 50 years of age who presented with fragility fractures of the hip. The authors noted that the rates of

assessment and prescribing increased, particularly among male patients, and that supplementation continued at 6 weeks followup.

The most-substantial risk factor for a fragility fracture is having sustained a prior fracture. However, most patients, especially men, are not routinely screened for low bone mass or contributors to low bone mass after the initial fracture, losing a critical opportunity for intervention. A variety of protocols have been described for assessing bone health after a fracture, including assessment by the orthopaedic surgeon during the initial hospitalization, consultation of endocrinologists during the initial hospitalization, alerting the patient's primary care provider of the occurrence of a fracture, or followup with a fracture liaison service. All of these have been described as having variable levels of success in improving rates of bone health evaluation [1, 3]. The

most-critical initial step is the initial identification of a given fracture as being a harbinger of poor bone health.

The Accreditation Council for Graduate Medical Education requires documented education in the areas of systems-based practice and practice-based learning and improvement. In addition, the Clinical Learning Environment Review program evaluates resident engagement in quality improvement efforts. These can be some of the most-difficult areas in which to develop education programs due to variable faculty and resident training in quality improvement, limited time and financial resources to add more material to the curriculum, differing quality improvement cultures at training institutions, and the clinical volume needed for quality improvement projects to produce good results [2]. However, engaging residents in quality-improvement studies, such as the one described in this article, not only improves care for those patients included in these projects, but also translates into improved care by residents, and makes residents more prepared for a practice environment

This CORR Insights® is a commentary on the article "A Resident-led Initiative Improves Screening and Treatment for Vitamin D Deficiency in Patients with Hip Fractures" by Lansdown and colleagues available at: DOI: 10.1007/s11999-016-5036-4.

The author certifies that she, or a member of her immediate family, has no funding or commercial associations (eg, consultancies, stock ownership, equity interest, patent/licensing arrangements, etc.) that might pose a conflict of interest in connection with the submitted article.

All ICMJE Conflict of Interest Forms for authors and *Clinical Orthopaedics and Related Research*® editors and board members are on file with the publication and can be viewed on request.

The opinions expressed are those of the writers, and do not reflect the opinion or policy of *CORR*® or The Association of Bone and Joint Surgeons®. This *CORR Insights*® comment refers to the article available at DOI: 10.1007/s11999-016-5036-4.

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that is increasingly focused on measuring and reimbursing for quality [2]. This project encourages residents to be more aware of the presence of fragility fractures, with the hope of eventually incorporating this protocol, or something similar, into their practices.

Where Do We Need To Go?

Although this study demonstrated an increase in evaluation and treatment of vitamin D deficiency, the length of followup (6 weeks) is short. Most studies of pharmacologic intervention after a fragility fracture demonstrate poor adherence by 12 months after the fracture. Additional research needs to identify causes of poor adherence, methods to improve patient and family education in the importance of adherence, and the optimal method of continued followup.

Once the patient has successfully healed and rehabilitated after a hip fracture, future followup could be provided by the patient's primary care provider, endocrinologist, or fracture liaison. However, which healthcare professional is best positioned to provide this followup has not been clearly identified. Future research may wish to focus on best practices in this regard.

Future projects might also address other musculoskeletal conditions that impose heavy burdens of disease, such

as recommendations for weight loss or exercise programs for patients with osteoarthritis. However, future studies should assess the long-term impact of these protocols—specifically examining quality of care and patient outcomes—once current residents enter practice.

How Do We Get There?

The patients included in this study, as well as future patients recruited at this training program, should be reassessed after their fractures at 6 months and 12 months to determine their compliance with vitamin D and other recommendations made to improve their bone health, as well as to prevent future fractures. Ideally, additional training programs would be recruited to join this effort. With a sufficient number of patients, impact on future fracture incidence could also be determined. For those patients no longer taking their medications as prescribed, further information could be gathered to identify barriers to adherence. In addition, the healthcare professionals following the bone health of these patients should be identified, to identify those that have the greatest impact on improving treatment adherence, whether orthopaedic surgeons, primary care, endocrinologists, or fracture liaisons, help to determine best practices

for long-term bone health and future fracture reduction.

Future studies examining the long-term impact of quality-improvement projects focused on screening and treating vitamin D deficiency in patients with acute hip fractures would require a prohibitively large patient population before real improvements in secondary fracture incidence could be determined. A more-feasible option would be to include questions concerning the frequency with which these physicians assess vitamin D levels among their fracture patients and their degree of comfort in taking care of their patients' bone health, perhaps via a postgraduation survey.

References

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