OVERVIEW
Osteoporosis is a chronic metabolic disease characterized by an increase in bone turnover, progressive loss of bone mass, microarchitectural deterioration, and increased fracture risk. Bisphosphonates are still the most widely used pharmacologic treatment for osteoporosis. They bind to bone hydroxyapatite, impair the osteoclasts ability to resorb bone, induce osteoclast apoptosis and increase the BMD reducing the risk of fractures by 50-70%. Bisphosphonates accumulate in the bone and therefore, their inhibitory effects on osteoclasts may persist for years after drug discontinuation. This mechanism has led to controversy regarding the ideal duration of therapy and whether the drug provides protection after being discontinued. There has been limited data addressing the benefits of this type of “drug holiday” and little is known regarding the initiation and duration of the holiday. In addition, controversy exists regarding if and when bisphosphonates should be resumed or whether another treatment option should be explored.

TARGET AUDIENCE
This activity is targeted to orthopaedists, rheumatologists, endocrinologists, family medicine physicians, internists, residents, fellows, physician assistants and nurse practitioners.

Agenda

<table>
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<tr>
<th>Time</th>
<th>Session</th>
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<tr>
<td>7:00 pm</td>
<td>Introduction to the Program</td>
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<td>Charles N. Cornell, MD</td>
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<tr>
<td>7:05 pm</td>
<td>Bisphosphonate Treatment in Osteoporosis: Optimal Duration of Therapy and the Incorporation of a Drug Holiday</td>
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<td>Joseph M. Lane, MD</td>
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<td>7:25 pm</td>
<td>Bisphosphonate Drug Holiday? Celebrate?</td>
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<td>Alana C. Serota, MD, CCFP, CCD</td>
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<td>7:40 pm</td>
<td>Discussion/Online Q&amp;A</td>
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<td>Charles N. Cornell, MD</td>
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<td>8:00 pm</td>
<td>Adjourn</td>
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Faculty and agenda subject to change.
Activity is not accredited.

Read the HSS Journal® Article
Bisphosphonate Treatment in Osteoporosis: Optimal Duration of Therapy and the Incorporation of a Drug Holiday
Authors: Jordan C. Villa, MD; Arianna Gianakos, BS; Joseph M. Lane, MD

Commentary
Bisphosphonate Drug Holiday? Celebrate?
Alana C. Serota, MD, CCFP, CCD

Continued
Program Faculty

ACTIVITY DIRECTOR

Charles N. Cornell, MD
Attending Orthopaedic Surgeon
Hospital for Special Surgery
Professor of Clinical Orthopaedic Surgery
Weill Cornell Medical College
Weill Cornell Medicine
Editor-in-Chief, HSS Journal©

HSS FACULTY

Joseph M. Lane, MD
Attending Orthopaedic Surgeon
Professor of Orthopaedic Surgery
Weill Cornell Medical College
Weill Cornell Medicine

Alana C. Serota, MD, CCFP, CCD
Physician
Ambulatory Care Center

Abstract

Background
Bisphosphonates are the most widely used treatment for osteoporosis. They accumulate in the bone for years, and therefore, their inhibitory effects on osteoclasts may persist after drug discontinuation. The ideal duration of therapy remains controversial.

Questions/Purposes
The purpose of this study is to review the literature to determine (1) indications for drug holiday, (2) the duration of drug holiday, (3) the evaluation during drug holiday, and (4) the proper treatment and maintenance after drug holiday.

Methods
A review of two electronic databases (PubMed/MEDLINE and EMBASE) was conducted using the term “(Drug holiday),” in January 29, 2015. Inclusion criteria were as follows: (1) clinical trials and case control, (2) human studies, (3) published in a peer-review journal, and (4) written in English. Exclusion criteria were as follows: (1) case reports, (2) case series, and (3) in vitro studies.

Results
The literature supports a therapeutic pause after 3–5 years of bisphosphonate treatment in patients with minor bone deficiencies and no recent fragility fracture (low risk) and in patients with moderate bone deficiencies and/or recent fragility fracture (moderate risk). In these patients, a bone health reevaluation is recommended every 1–3 years. Patients with high fracture risk should be maintained on bisphosphonate therapy without drug holiday.

Conclusion
The duration and length of drug holiday should be individualized for each patient. Evaluation should be based on serial bone mass measurements, bone turnover rates, and fracture history evaluation. If after drug therapy, assessments show an increased risk of fracture, the patient may benefit from initiating another treatment. Raloxifene, teriparatide, or denosumab are available options.

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