

Abstract Number	Abstract Title
11	Self-referral System for Early Diagnosis and Management of Severe Bisphosphonate Related Complications in Osteoporosis Patients
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## Background

Bisphosphonate (BP) therapy is an effective treatment for osteoporosis. Bisphosphonates increase bone mass and reduce the risk of fractures in patients with osteoporosis by suppressing bone resorption. The long-term use of BPs has been associated with bisphosphonate-related atypical femoral fracture (AFF) and osteonecrosis of the jaw (BRONJ). AFF and BRONJ are rare but serious complications of long-term bisphosphonate therapy. A quick management referral system is important in out-patient setting when patient is suspected to suffer from AFF or BRONJ.

### Objectives

1. To evaluate the effectiveness of Osteoporosis Self-Referral System (OS-RS)
2. To improve quality of service and continuity of care

## Methods / Cases

Osteoporosis Self-Referral System (OS-RS) was established since 2010. A streamline self-referral mechanism was introduced to patients during the first visit and follow ups in Osteoporosis Clinic. All new BP users were given education on AFF and BRONJ particularly on the risk factors, precautions and prodromal symptoms. They were instructed to call back, walk-in, or fax to clinic for advice when they have dental problems, unexplained thigh or buttock pain and/or hip fracture while on BP. All self-referral concerning AFF and BRONJ were discussed in case conferences with physicians. Ad-hoc medical consultation appointment was arranged when necessary. The effectiveness of the self-referral mechanism was assessed by the number of patients who used the service, and the number of ad-hoc follow-up sessions arranged.

## Results

695 (86.6% female) patients who attended Osteoporosis Clinic from Jan 2010 to Jan 2019 were put on BPs (614, 88.4% Alendronate; 46, 6.6% Risedronate; and 35, 5.0% Ibandronate). 52 (7.4%) patients used OS-RS. Half of the self-referrals were subsequently diagnosed to have AFF (18, 34.6%) or BRONJ (8, 15.4%). Others (26, 50%) were due to non-specific musculoskeletal thigh pain (12, 46.1%) or toothache (14, 53.9%). 26 (50%) patients with general enquiries were arranged for education and counselling in nurse clinic. Ad-hoc medical consultation with physicians were arranged for 26 (50%) patients with BRONJ and AFF. Follow-ups were advanced for this group of patients (3.6 1.0 vs, 6.7 1.1 months,  $p < 0.001$ ), and all 26 patients were put on alternative anti-osteoporotic agents (Teriparatide: 18, 69.2%; Strontium: 8, 30.8%) after the consultation.

## Conclusion

AFF (2.5%) and BRNOJ (1.1%) are rare complications in osteoporotic patients treated with BP. The OS-RS effectively enhances the quality of service and maintains the continuity of care in patients with osteoporosis. The system allows patients to seek timely medical advice actively from healthcare professionals in between their routine follow-ups. This also empowers patients to participate actively in their disease management.