None of the patients presented toxicity, and all the test results were within normal parameters.

We observed an increase in hemoglobin levels after three cycles, going from a mean of 10.1—11.7 g/dl.

Two patients presented pathological fractures after the first and third treatment cycles, but continued with the treatment regimen.

Conclusion: We concluded that 1-hour infusions of *Bonefos*® every 28 days in association with palliative oncological treatment for bone metastases may be a safe alternative with regard to adverse effects and toxicity, and efficiency in controlling bone pain. The short infusion time may lead to greater comfort for patients.

doi:10.1016/j.ctrv.2008.03.101

P76. Physiotherapy in metastatic tumors of humerus: A report of three cases

Ali Reza Jamshidi Fard, Hosain Ali Hadi, Kamran Moshfeghi

Arak University of Medical Sciences, Arak, Markazi, Islamic Republic of Iran

Bone is the most common site for distant spread of breast cancer. Three cases of metastatic tumors in proximal diaphysis/metaphysic of humerus are described. All three female patients were referred to physiotherapy because of shoulder stiffness and chronic upper limb edema long after mastectomy of the involved breast. Metastases to the bone caused destruction, pain, and additional swelling while any electrotherapeutic modalities or manipulative accessory motions had their own restrictions in such cases. Possible fractures and metastases to the soft tissues must also be considered. All patients were taking bisphosphonates as osteoclastic function inhibitors regularly, and sometimes NSAIDs to reduce bone pain, prescribed by their oncologists. We applied Functional Faradic Stimulation under bandage pressure, massage, muscle energy techniques and active/ active assisted movements as exercise therapy for five weeks. Upper limb pain, Range of Motions (ROM), muscle strength and functions improved in our cases.

We also discussed considerable reduction of swellings when the shoulder joint abduction exceeded 90° and scapulohumeral range of motions increased.

doi:10.1016/j.ctrv.2008.03.102

P77. Guided bone regeneration for bisphosphonate-induced osteonecrosis of the jaws

Pierre Mouret, Hervé Moizan, Mihaela Muresan, Eric Gerard, Bernard Montinet

CHR Metz Bon Secours, Metz, France

Introduction: Since 2004, long-term nitrogenous bisphosphonate (NBP) treatment for bone-seeking malignancies is increasingly recognized as inducing osteonecrosis of the jaws (ONJ). However, the pathophysiology of this serious long-term side-effect, the incidence and co-morbidities remain unclear and conventional treatments are ineffective. Platelet rich fibrin (PRF) and platelet rich plasma (PRP) are new applications in guided bone regeneration (GBR) alongside Bone Morphogenetic Proteins. They are storage vehicles of multiple growth factors able to induce bone regeneration after surgical procedures.

Case-report: A 48 year-old female with cervix carcinoma developed metastatic disease one year after radiotherapy and non-conservative surgery in 2002. She underwent a classic chemotherapy and NBP for osteolytic bone metastases and secondary hypercalcemia. In 2006, she presented severe spontaneous jaw pain with parodontal involvement of the three right lower jaw molars, genian cellulitis and periapical osteolysis on dental panoramic radiography. She had avulsions of the involved molars under antibiotic coverage followed by progressive and septic avascular ONJ confirmed by surgical tissue analysis. She had partial trans-oral jaw resection with hyperbaric oxygen therapy and long-course antibiotic treatment and, for the first time in this setting, PRF filling as a GBR procedure. The results in terms of clinical improvement and bone regeneration on jaw CT-scan are satisfying on a 19-month follow-up.

Conclusion: There are no effective conventional treatments for NBP-induced ONJ and very few new procedures — such as PRP — are being tested (under restriction in certain countries). Meanwhile the frequency of this side-effect is steadily increasing in NBP-treated patients. Our results are very encouraging and definitely need long-term confirmation on a larger number of patients.

doi:10.1016/j.ctrv.2008.03.109

P78. NHS resource use and capacity planning in breast cancer patients with metastatic bone disease treated with IV zoledronic acid or oral ibandronic acid

Robert Grieve [a], Kate Peperell [b], Elizabeth Hamilton [c]

[a] *University Hospitals Coventry and Warwickshire NHS Trust, Coventry, United Kingdom*
[b] *pH Associates, Marlow, United Kingdom*
[c] *Roche Products Ltd., Welwyn Garden City, United Kingdom*

Objectives: To describe the management pathways of metastatic bone disease with IV zoledronic acid (ZA) and oral ibandronic acid (IA) and to quantify the impact on secondary care resources for capacity planning.

Methods: This ongoing five centre study involves retrospective review of medical records of 200 patients with bone metastases from breast cancer, from first dose of bisphosphonate until the end of therapy, quantifying all secondary care resources consumed. Staff and patient activity, consumables and equipment required to dispense and administer each dose of IA and ZA are also quantified. Reference costs will be applied to provide an economic analysis of administration of the two agents in secondary care. This poster represents an interim analysis of our findings.

Results:

Retrospective: resources per management pathway		
Median number	IA (n = 69)	ZA (n = 85)
Scheduled clinic visits	3	7
Day care attendances	2	9.5
Quantity of drug prescribed by secondary care	29 tablets	7.5 doses

Median numbers of inpatient, A&E and unscheduled clinic visit did not differ between groups.

Prospective: time for dispensing and administration		
Mean staff activity time (min)		
	IA (n = 10)	ZA (n = 19)
Pharmacists	4.30	0.13[a]
Technician	1.30	0
Clerk	0.42	0
Nurses	0	27.83
Total	6.02	27.96
Median patient time (min)		
Waiting	25.48	63.12
Infusion	0	17.47
Chair	0	37.00

[a] Represents a single patient.

Conclusion: Oral IA requires fewer hospital attendances and less secondary care staff time than does the preparation and administration of IV ZA. After the first prescription of IA further supplies are provided in primary care. In contrast, treatment with IV ZA requires hospital day care attendance 3—4 weekly, for a median of 7.5 doses, taking a total of 4 h:38 min of chair time per patient. Oral IA is more convenient for the patient, releases chair time in busy day care units and reduces secondary care costs.

doi:10.1016/j.ctrv.2008.03.111

P79. N-Telopeptide of type I collagen (NTX) levels and prognosis in patients with bone metastases from non-small cell lung cancer (NSCLC) receiving zoledronic acid (ZOL) or placebo

Vera Hirsh[a], Pierre Major[b], Allan Lipton[c], Richard Cook[d], Corey Langer[e], Matthew Smith[f], Janet Brown[g], Robert Coleman[h]

[a] *McGill University Health Centre, Montreal, Quebec, Canada*
[b] *McMaster University, Hamilton, Ontario, Canada*
[c] *Penn State Milton S. Hershey Medical Center, Hershey, PA, United States*
[d] *University of Waterloo, Waterloo, Ontario, Canada*
[e] *Fox Chase Cancer Center, Philadelphia, PA, United States*
[f] *Massachusetts General Hospital Cancer Center, Boston, MA, United States*
[g] *University of Leeds, Leeds, United Kingdom*
[h] *Weston Park Hospital, Sheffield, United Kingdom*

Introduction: Recent retrospective analyses of trial data in patients with bone metastases from NSCLC or other solid tumors (N = 772) found that ZOL-treated (4 mg/3 to 4 weeks) NSCLC patients with high baseline NTX ($\geqslant$64 nmol/mmol creatinine) had significantly longer survival vs placebo (Hirsh V et al. *J Thorac Oncol.*, in press). However, the clinical utility of high on-study NTX assessments and elevated baseline levels ($\geqslant$146 IU/L) of the bone-formation marker bone-specific alkaline phosphatase (BALP) need further investigation.

Methods: Patients with NSCLC and baseline bone marker assessments (n = 262) in the phase III, placebo-controlled ZOL trial were included. Analyses were performed by baseline BALP and NTX and by on-study NTX status. Kaplan—Meier survival estimates and Cox regression analyses of relative risks of death were performed.

Results: Among placebo-treated patients: ~50% had high NTX at baseline and on-study; both were associated with significantly increased risks of death vs normal NTX ($P \leqslant .001$ each). In contrast, although NTX levels were high in 56% of the ZOL group at baseline, only $\leqslant$10% of ZOL-treated patients had high NTX at most on-study assessments. In the ZOL group, high NTX on study was associated with a significantly increased risk of death vs low NTX ($P < .001$). In the high baseline NTX subset, ZOL was associated with a 46% reduced risk of death in patients with high BALP ($P = .006$ vs placebo), but with no risk reduction in normal BALP patients ($P > .05$).

Conclusions: These analyses suggest that bone metastases contribute significantly toward mortality in NSCLC patients, and NTX may have prognostic utility. ZOL effectively normalizes NTX levels in patients with NSCLC. High NTX levels–in general–indicate a poor prognosis. Prospective studies are needed to investigate whether ZOL has an effect on survival in NSCLC patients with bone metastases and high baseline bone marker levels.

doi:10.1016/j.ctrv.2008.03.118

P80. Minimally invasive treatment of tumour related vertebral compression fractures and other metastatic bone lesions

Emily Sinclair[a], Michael Ford[b], Lori Holden[b], Edward Chow[a]

[a] *University of Toronto, Toronto, Ontario, Canada*
[b] *Sunnybrook Health Science Centre, Toronto,Ontario, Canada*

Objective: Canada, 2006, 153,100 new cases and 70,400 deaths from cancer. Bone metastases are a frequent complication of cancer. Advances in systemic therapy and better palliative care are increasing the life expectancy to 5 years for a select cohort of cancer patients. Successful management is essential for reduced skeletal complications and for maximizing patient quality of life. However oncology patients are often poor candidates for open surgery due to soft bone/tumour mass and co-morbidities. Minimally invasive procedures like percutaneous vertebroplasty, kyphoplasty, cementoplasty and percutaneous osteoplasty are now in regular use to treat the chronic pain of VCF's and