

BC Cancer Protocol Summary for Treatment of Multiple Myeloma with Pamidronate

Protocol Code: MYPAM
Tumour Group: Multiple Myeloma
Contact Physician: Dr. Kevin Song

ELIGIBILITY

- All patients with multiple myeloma who require systemic treatment and have demonstrated intolerance to zoledronic acid including renal failure. No CAP is required when moving from MYZOL

TESTS

- Tests should be done as indicated for the standard management of myeloma.
- Every 12 weeks: serum creatinine

PREMEDICATIONS

None.

TREATMENT

Drug	Dose	BC Cancer Administration Guideline
pamidronate	30 mg	IV in 250 mL NS over 1 hour

For patients with hypercalcemia see SCHYPCAL.

- Repeat every 4 weeks or every 12 weeks from initiation of systemic chemotherapy:
 - For patients who undergo high dose chemotherapy and stem cell transplantation, pamidronate should be continued at approximately monthly intervals until assessment of response. Most patients reach a complete or very good partial response in which case pamidronate should be stopped after a total of 12 months; otherwise, continued for 24 months then stopped.
 - For patients who do not undergo a stem cell transplant pamidronate should be continued for 24 months then stopped.
- If systemic treatment is restarted, pamidronate may be resumed for another 24 month course.
- Patients may continue pamidronate beyond 24 months at physician's discretion. It is recommended that pamidronate be given every 12 weeks in this circumstance. Evidence of benefit beyond 24 months is uncertain.

DOSE MODIFICATIONS

1. Renal dysfunction:

- There is limited experience with pamidronate in patients with renal dysfunction. Caution in patients with a serum creatinine greater than 440 mol/L or a creatinine clearance less than 30mL/min. For patients who show evidence of deterioration in renal function while on pamidronate, treatment should be withheld until renal function returns to within 10% of baseline value. Renal deterioration is defined as follows:
 - patients with a normal baseline creatinine: increase of 44.2 micromol/L
 - patients with an abnormal baseline creatinine: increase of 88.4 micromol/L

PRECAUTIONS

1. Pamidronate should NEVER be given as a bolus since severe local reactions and thrombophlebitis may result from high concentrations.
2. **Symptomatic hypocalcemia** (e.g., muscle spasms, irritability) may occur and may require calcium supplement. Avoid concomitant use of other calcium lowering agents such as corticosteroids and loop diuretics.
3. After the use of bisphosphonates there is a persistent risk of **jaw osteonecrosis**. Patients in whom bisphosphonates are planned should have prophylactic assessment and management by a dentist and all later dental work should be undertaken cautiously by dental specialists experienced in the recognition and management of jaw osteonecrosis.
4. **Need for irradiated blood products:** Patients receiving an autotransplant require irradiated blood products from 7 days prior to collection to 3 months post transplant (6 months if total body irradiation conditioning) to eliminate the risk of potentially life-threatening transfusion-related graft-versus-host-disease. All other myeloma patients do not require irradiated blood products.

Call Dr. Kevin Song or tumour group delegate (Leukemia/BMT) at (604) 875-4863 or after hours (604) 875-4111 with any problems or questions regarding this treatment program.

REFERENCES:

1. Berenson JR, Lichtenstein A, Porter L, et al: Long-term pamidronate treatment of advanced multiple myeloma patients reduces skeletal events. Myeloma Aredia Study Group. J Clin Oncol 1998;16:593-602.
2. Bloomfield DJ. Should bisphosphonates be part of the standard therapy of patients with multiple myeloma or bone metastases from other cancers? An evidence-based review. J Clin Oncol 1998;16:1218-25.
3. Shipman CM, Croucher PJ, Russell RGG, et al. Bisphosphonates induce apoptosis in human myeloma cells. Bone 1998;22 (3 Suppl);51S (abstract B25).
4. Badros A, Weikel D, Salama A, et al. Osteonecrosis of the jaw in multiple myeloma patients: clinical features and risk factors. J Clin Oncol 2006;24(6):945-52.
5. Vilimovskij A, Thuerlimann B, Berenson JR, et al. Renal safety and tolerability of 90 mg of aredia (pamidronate) administered as an intravenous 1 hour infusion: preliminary results. Proc Am Soc Clin Oncol 1999; 18: 576a (abstract 2223).
6. de Lemos ML, Taylor SC, Barnett JB, et al. Renal safety of 1-hour pamidronate infusion for breast cancer and multiple myeloma patients: comparison between clinical trials and population-based database. J Oncol Pharm Pract 2006;12:193-9.
7. Chantzichristos D, Andréasson B, Johansson P. Safe and tolerable one-hour pamidronate infusion for multiple myeloma patients. Ther Clin Risk Manag 2008;4(6)1371-4.
8. Durie B. Use of bisphosphonates in multiple myeloma: IMWG response to Mayo Clinic consensus statement. Mayo Clin Proc 2007;82(4):516-8.
9. Gimsing, P, Carlson K, Turesson I, et al. Effect of pamidronate 30 mg versus 90 mg on physical function in patients with newly diagnosed multiple myeloma (Nordic Myeloma Study Group): a double-blind, randomised controlled trial. Lancet Oncol 2010;11:973-82.
10. Berenson JR, Rosen L, Vescio R, et al. Pharmacokinetics of pamidronate disodium in patients with cancer with normal or impaired renal function. J Clin Pharmacol 1997;37(4):285-290.
11. Pfizer Canada. Pamidronate disodium product monograph. Kirkland, Quebec. 11 December 2018