

# BC Cancer Protocol Summary for Treatment of Multiple Myeloma with Zoledronic Acid

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

## ELIGIBILITY:

- All patients with multiple myeloma who require systemic treatment
- Adequate renal function (CrCl greater than or equal to 30 mL/min)
- Note: Both zoledronic acid and pamidronate are available for this indication, however, zoledronic acid is preferred over pamidronate given the overall survival data. The exception is in the setting of renal failure where pamidronate should be used. No CAP is required when moving from MYPAM.

## TESTS:

- Tests should be done as indicated for the standard management of myeloma.
- Completion of necessary dental work is recommended prior to starting zoledronic acid
- Baseline and prior to each treatment: serum creatinine
- If clinically indicated: serum calcium\* and albumin (or ionized calcium)  
\*corrected calcium (mmol/L) = total calcium (mmol/L) + (0.02 x [40 – albumin in g/L])

## PREMEDICATIONS:

None

## TREATMENT:

Drug	Dose	BC Cancer Administration Guideline
zoledronic acid	4 mg	IV in 100 mL NS over 15 minutes

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

## DOSE MODIFICATIONS:

### 1. Renal dysfunction

Creatinine clearance (mL/min)	Dose
Greater than 60	4 mg
50 to 60	3.5 mg
40 to 49	3.3 mg
30 to 39	3 mg
Less than 30*	not recommended

\*use pamidronate 30 mg IV, see MYPAM

- There is limited experience in patients with serum creatinine greater than 440 micromol/L; caution is required.

## PRECAUTIONS:

- Zoledronic acid should not be given as a bolus due to severe local reactions and thrombophlebitis.
- 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.
- 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.
- 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 (Leukemia/BMT) or Dr Laurie Sehn (Lymphoma) or tumour group delegate with any problems or questions regarding this treatment program. (Leukemia/BMT at (604) 875-4863 or after hours (604) 875-4111; Lymphoma at (604) 877-6000 or 1-800-663-3333).**

## REFERENCES:

- Morgan GJ, et al. First-line treatment with zoledronic acid as compared with clodronic acid in multiple myeloma (MRC Myeloma IX) : a randomised controlled trial. *Lancet* 2010; 376: 1989-99
- Himelstein AL, et al. Effect of Longer-Interval vs Standard Dosing of Zoledronic Acid on Skeletal Events in Patients With Bone Metastases. A Randomised Clinical Trial. *JAMA* 2017, Vol 317. No. 1