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Descriptive Analysis of Bortezomib Use in Multiple Myeloma in Four Adult University Teaching Hospitals in Quebec, Canada

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Abstract

Background: Bortezomib, a reversible inhibitor of the 26S proteasome widely used in the treatment of multiple myeloma, is now being used in various other indications. Pharmacy directors gave the Therapeutic Drug Management Program (TDMP - www.pgtm.qc.ca) the mandate to evaluate bortezomib use in four University Hospitals in Quebec, Canada.

Objectives: Describe bortezomib use for all indications in our hospitals and review its utilisation in the treatment of multiple myeloma.

Methods: A review of pharmacy databases was performed to identify patients who received

bortezomib between June 1st 2012 and May 31st 2013. The pharmaceutical and medical records of every patient who received bortezomib were reviewed to assess the treatment, pathology and adverse events.

Results: Two hundred and thirty two bortezomib regimens were administered to 227 different patients during the study period. Median age was 68. The most frequent indication (55%) was first-line treatment of multiple myeloma (n=128) followed by treatment of relapsed/refractory disease (31%) (n=73). Various other indications, including amyloidosis (n=17), lymphoplasmacytic lymphoma (n=12) and mantle cell lymphoma (n=2), represented 13% of the population.

At the time of data analysis, 35% of patients were still treated with bortezomib, 25% had finished their planned treatment and 34% had discontinued treatment because of adverse events or disease progression. Fifteen patients (6%) died during the study period.

Among the 45 patients eligible for autologous stem cell transplant (ASCT), the main regimen used was the association of bortezomib and dexamethasone (VelDex) (n=27), primarily using subcutaneous bortezomib (n=24) at 1.3 mg/m² (n=30). Median treatment duration was four cycles. Twenty-eight patients have

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undergone ASCT and only two progressed.

The association of bortezomib, melphalan and prednisone (VMP) (54.2%) followed by VelDex (29%) and the association of cyclophosphamide, bortezomib and dexamethasone (CyborD) (16.8%) were the regimens used in the population (n=83) not eligible to ASCT. Response rate using international uniform response criteria for multiple myeloma was 47.9% excluding patients still receiving treatment at the time of data collection.

Seventy three patients received bortezomib for relapsed/refractory myeloma. Of these patients, thirty two (43.8%) discontinued therapy, nineteen due to disease progression, eight for the occurrence of side effects and five for other reasons. The initial dose was variable, from 1.0 to 1.6 mg/m², and close to half of this patient population received CYBorD (49.4%), followed by VelDex (30.2%) and VMP protocols (15%). The number of cycles for patients who completed treatment (4 to 9) as well as the median exposure time (57 to 223 days) was also highly variable.

Respectively 8.5% and 10.9% of the population treated with bortezomib for multiple myeloma were hospitalized (n=17) or had to discontinue treatment (n=22) because of adverse events (mostly hematologic toxicity, peripheral neuropathy or gastro-intestinal toxicity).

Conclusions: Bortezomib is widely used in the treatment of multiple myeloma. Treatment algorithms should be developed and implemented to optimize the use of bortezomib, particularly in the relapsed/refractory setting. Standard regimens should also be implemented in each center. The utilisation of pre-printed orders for the prescription of chemotherapy regimens promotes uniform prescription. A review of the literature should be performed and recommendations should be made for the use of bortezomib in off-label indications like amyloidosis and lymphoplasmacytic lymphoma.

Disclosures Off Label Use: bortezomib use in amyloidosis and lymphoplasmacytic lymphoma. **Lemieux-Blanchard:** *celgene:* Membership on an entity's Board of Directors or advisory committees; *Amgen and Janssen:* Other: preceptorship. **Bérard:** *Janssen:* Honoraria. **Sebag:** *Janssen:* Honoraria; *Amgen:* Honoraria; *Celgene:* Honoraria; *Novartis:* Honoraria.

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