intravenously (IV) at 10 mg/kg on days 1,8,15, and 22 during cycles 1 and 2. On cycle 3 and beyond, ELO will be given at 20 mg/kg on day 1. POM capsules will be given per Orem (PO) at 3 mg daily, on days 1-21 during all cycles. CFZ will be given as an IV infusion at 20 mg/m2 day 1, cycle 1 and 56 mg /m2 on days 8 and 15 of cycle 1, and days 1, 8 and 15 on cycle 2 and beyond. Pts will be premedicated with 28 mg PO of DEX and given 8 mg DEX IV on the days of ELO infusion. Clinical trial: NCT0310427. **Results:** 13 of planned 39 pts have been enrolled. The median age was 63 years, and 10 (77%) were male. Pts received a median of 6 prior treatments. Among 12 evaluable pts, the clinical benefit and overall response rates were 50% and 42%, respectively (2 CR, 1 VGPR, 2 PR and 1 MR), and 2 and 4 pts showed SD and PD. For 5 responding pts, the median duration of response was 4.6 months with the median follow up time of 5.3 months. Most common $\geq$ G3 AEs included hypophosphatemia (15%), leukopenia (15%) and sepsis (15%). Most common SAEs included sepsis (15%) and acute encephalopathy (15%); 1 pt expired while on the study. **Conclusions:** Preliminary results from this Ph 2 trial demonstrate that ELO in combination with POM, DEX and CFZ appears to be an effective therapy for high-risk RRMM pts.

Keywords:
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The Impact of Lenalidomide Maintenance on Second Line Chemotherapy in Transplant Eligible Patients with Multiple Myeloma in the Canadian Setting

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Introduction: Post-transplant lenalidomide (L) maintenance (LM) is used routinely in frontline treatment of patients with multiple myeloma. However, it's impact on response to L-containing therapy in first relapse is unclear. This is of critical importance given the efficacy of L-containing therapy in relapsed disease. We sought to address this question using the Myeloma Canada Research Network Canadian Multiple Myeloma Database (MCRN CMM-DB), a centralized research platform encompassing data from 13 Canadian cancer centers. **Methods:** The study population included patients treated with upfront ASCT and bortezomib-based induction who had experienced at least one relapse and had 2 years of follow-up. Our primary endpoint was second progression free survival (2nd PFS) defined as time from initiation of second line chemotherapy to second relapse, death or last follow-up. We also examined overall survival from time of initiation of second line chemotherapy to death or last follow-up (2nd OS) and depth of response to 2nd line treatment. **Results:** 575 patients were included. 297 (52%) patients were treated with LM of which 136 (24%, group 1) received L at relapse and 161 (28%, group 2) did not. 278 (48%) patients did not receive LM of which 209 (36%, group 3) received L at relapse and 69 (12%, group 4) did not. There was no significant difference in ISS stage ($p = 0.17$) or presence of high-risk cytogenetics ($p = 0.24$) where tested. The median 2nd PFS for patients in groups 1, 2, 3 and 4 respectively were 10.2 months (95% CI: 7.1-13.9), 14 months, 18 months and 12 months. 2nd PFS from group 3 was statistically significant compared to groups 1 ($p = 0.04$), group 2 ($p = 0.047$) and group 3 (0.0495). No other significant differences were observed. At the time of analysis 217 patients (38%) had died. The OS from 2nd line therapy in groups 1, 2, 3, and 4 respectively were 55.3 months (95% CI: 49 – NYR), 38 months, 49 months and 27 months. A statistically significant difference in OS from relapse was noted between groups 1 and 2 ($p = 0.004$) and groups 1 and 4 ($p = 0.02$). Rates of favorable response (VGPR and higher) were not significantly different across the groups at 84%, 87%, 78% and 80% in groups 1, 2, 3, and 4 respectively ($p = 0.23$). **Conclusion:** There remains a paucity of data examining L-based second line therapy for patients relapsing on LM. In patients who did not receive LM there is a superior 2nd PFS when L is used at first relapse. With the widespread use of LM however, this cohort is diminishing. Outcomes of patients treated with LM are more relevant to current practice. For such patients, our real-world data demonstrated no statistically significant worsening of 2nd PFS in those who receive L at relapse. Additionally, in this cohort a superior 2nd OS was also seen. As such, the widespread us of LM in the management of frontline MM should not deter clinicians from choosing L-based therapy at first relapse

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