Weekly Bortezomib in induction chemotherapy for newly diagnosed multiple myeloma is better tolerated and equally efficient: real-world data from a retrospective audit

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Background: The VTD (Bortezomib, Thalidomide, Dexamethasone) triplet chemotherapy regime is frequently used as induction prior to autologous stem cell transplant. The manufacturer's protocol recommends a twice-weekly dosing schedule. Adverse effects are common, most notably neuropathy and cytopenias. These can be disabling and are often permanent with significant impacts on quality of life. This limits drug tolerance with management confined to dose reduction or discontinuation. A once-weekly dosing schedule has been widely adopted, but to date, no clinical trials have been conducted to compare the efficacy of this dosing frequency in transplant-eligible myeloma.

Methods: In order to investigate prescribing practice locally, we conducted a retrospective audit in Leicester Royal Infirmary, a tertiary Haematology centre in the UK. Real-world data was collected consecutively from all patients treated in the intensive treatment arm with VTD as first-line chemotherapy between January 2015 and November 2020.

Results: We demonstrate a trend of lower incidence of neuropathy, both peripheral and autonomic, with the weekly regime (PN$\geq$2: weekly 8.7% biweekly 19.6% AN: weekly 8.7%biweekly26.5%). There was also a trend of fewer serious adverse events with lower rates of hospital admissions due to infection (weekly 33.3% bi-weekly 47.8%). Patients on the weekly regime received more VTD cycles and a higher cumulative dose (p=0.044). The initial therapeutic response between the two regimes was similar (weekly: ORR 87% $\geq$VGPR 78.3%, bi-weekly: ORR 86.3% $\geq$VGPR 60.8%).

Discussion: Here we demonstrate that weekly Bortezomib is better tolerated whilst achieving similar initial therapeutic response. We believe that delivery of Bortezomib through a weekly regime facilitates patients being able to maintain on Bortezomib longer and receive higher cumulative doses. This may have important implications in those later deemed unsuitable or transplantation and for future treatment as intolerance or refractoriness limits the ability to obtain Bortezomib in further treatment lines.