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Effective Treatment of Bortezomib-Based Combination Chemotherapy

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A substantial clinical issue is presented by Non-Lymphoma Hodgkin's (NHL), a diverse group of lymphoid cancers. Relapse occurs often in patients receiving standard CHOP or CHOP-based therapy. The Nuclear Factor-B (NF-B) signalling system can be inappropriately activated in NHL patients, according to a recent series of basic investigations. This finding raises the possibility that the NF-B signalling pathway may be crucial to oncogenesis and the development of lymphoid malignancies. The anticancer effects of bortezomib can be attributed to several factors. The primary mechanism is its suppression of IB degradation, which keeps NF-B in the cytoplasm and lowers NF-B activity. To determine whether different chemotherapy regimens had varying efficacies, we examined 48 NHL patients who had received at least two cycles of bortezomib-based combination chemotherapy.

In this trial, non-Hodgkin lymphoma patients who had at least two rounds of bortezomib-based combination chemotherapy over a period of 6-8 weeks were included. From our hospital's pathology archives, tissue blocks with paraffin embedded in them were taken from NHL biopsy samples. All patients in CR or PR were considered to have received effective care, whereas all other patients were considered to have had ineffective care. For continuous variables, mean values, and Standard Deviations (SD) or median values and ranges were calculated as needed.

The 48 patients' median age ranged from 19-74 years; there were 13 women and 35 men among them. Prior chemotherapy had a median number of 1 regimen (with a range of 0-4) and a median number of 6 rounds (with a range of 0-18). 44 patients in all underwent 2–18 more cycles of chemotherapy based on bortezomib. Each patient's tumour samples were tested for the expression of the proteins p65 and RelB. In this small cross-sectional study, we looked at 48 non-lymphoma Hodgkin's patients and discovered that the positive expression of p65 after nuclear staining and the negative expression of RelB after nuclear staining tended to indicate a successful course of bortezomib-based combination chemotherapy.

One surprising finding in the analysis was that while only one patient was PR and none were CR, RelB-positive nuclear staining accounted for 33.3% of SD patients and 58.3% of PD patients. This study showed that the alternative pathway was activated in the group receiving unsuccessful treatment, and a strong link between the alternative pathway's activation and efficacy was discovered.

The modest cross-sectional investigation revealed a substantial difference in the activation of the NF-B

signalling pathway across different subtypes of NHL, which resulted in varying efficacy rates of combination chemotherapy for NHL patients using bortezomib as one of the active ingredients.

JOURNAL REFERENCE

Wang, J. and T. Liu, 2022. NF-κB signaling pathway and efficacy of bortezomib-based combination chemotherapy in patients with non-Hodgkin's lymphoma. Int. J. Pharmacol., 18: 850-855.

KEYWORDS

NF-κB, lymphoma, non-Hodgkin, Bortezomib, immunohistochemistry, treatment outcome, pathological studies