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Conference Abstract

P.42 The Effects of Chemotherapy on Arterial Stiffness in Patients with Hodgkin Lymphoma

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ABSTRACT

Introduction: Malignancies and cardiovascular disease are the two leading causes of mortality worldwide [1]. While there is extensive literature describing the cardiotoxic effects of chemotherapy on left ventricular systolic function [2,3], there is only little evidence regarding chemotherapy effects on a vascular functional parameters.

Purpose: Our aim was to investigate the effect of chemotherapy in aortic stiffness in patients with Hodgkin lymphoma (HL), a malignancy with known high metabolic burden.

Methods: Thirty two patients (mean age 65 years) with HL underwent therapy with Doxorubicin, bleomycin, vinblastine and dacarbazine (ABVD). The interim of their treatment was set at 1 to 3 days prior to initiating the 3rd chemotherapy cycle. All patients were reassessed six months after chemotherapy completion. Blood pressure (BP) and carotid-femoral pulse wave velocity (c-f PWV) as an index of aortic stiffness were measured at baseline, interim and after completion of chemotherapy.

Results: Figure illustrates c-fPWV changes from baseline to interim and 6 months after completion of chemotherapy in patients with HL and patients with NHL. As figure shows, c-f PWV decreased at treatment interim (by 0.34 m/s) and remained significantly decreased at 6 months after chemotherapy completion (by 0.52 m/s (overall $p < 0.001$, by ANOVA) The progressive decrease in c-f PWV remained statistically significant after adjustment for age, systolic BP and diabetes ($F = 4.853$, $p = 0.005$). Changes in systolic and diastolic BP from baseline, to interim and 6 months post therapy were insignificant (decrease by 4 mmHg and 1 mmHg respectively, compared to baseline, all $p > 0.05$).

Conclusion: Carotid-Femoral PWV decreased during and post chemotherapy in patients with Hodgkin lymphomas, suggesting that arterial stiffness improves with chemotherapy in these patients. Considering that systemic inflammation influences changes in aortic systems and that HL is an inflammatory rather than a solid tumor, the significant improvement in arterial stiffness after ABVD therapy imply that the metabolic burden of the malignancy may play a significant role in the arterial stiffness progression.

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