

Hyperlipoproteinemia, insulin resistance and metabolic syndrome in long-term survivors of Hodgkin lymphoma during childhood and adolescence

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Introduction

Long-term survivors of Hodgkin lymphoma during childhood or adolescence (HL survivors) are at high risk of developing treatment-related late cardiovascular sequelae.

Methods

In our study we evaluated the presence of modifiable cardiovascular risk factors (hypertension, hyperlipoproteinemia, hyperinsulinemia, obesity), endothelial and inflammatory markers (E-selectin, PAI-1, hs-CRP) and atherosclerotic changes in the common carotid arteries. Assessment was performed in 80 young adult Hodgkin lymphoma long-term survivors at more than 10 years after the potentially cardiovascular toxic anticancer treatment (median age at evaluation 34.7 years; range 24.1- 40.9 years). The HL survivors were compared with 83 age- and gender-matched healthy volunteers.

Results

The HL survivors showed unfavorable lipid profiles compared to those of healthy controls: triglycerides ($p=0.01$); total cholesterol ($p=0.0004$), low density lipoprotein cholesterol ($p=0.005$). In HL survivors, we found a higher prevalence of hypertension ($p=0.004$), insulin resistance ($p=0.0002$), hyperglycemia ($p=0.0002$) and metabolic syndrome ($p=0.01$). Ultrasonographic examination of both common carotid arteries revealed a higher prevalence of atherosclerotic plaques ($p=0.0009$) and higher carotid intima-media thickness ($p<0.0001$) in HL survivors. Markers of oxidative stress (advanced oxidation protein products, oxidized low-density lipoprotein), inflammation (hs-CRP) and endothelial dysfunction (E-selectin, PAI-1) were also higher in HL survivors ($p<0.0001$, $p=0.0002$, $p=0.0031$, $p=0.0087$, $p=0.004$, respectively).

Conclusion

Adult survivors of Hodgkin lymphoma during childhood and adolescence need follow-up with screening of metabolic syndrome components and unfavorable lifestyle factors and early management of these risk factors.

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