The study of serum and tissue cholesterol levels in children undergoing tonsillectomy

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Abstract

Background: Inflammatory and obstructive tonsillar diseases are among the most common diseases in childhood, and tonsillectomy is one of the most common surgical procedures in children. Current evidence indicates the potential association between cholesterol and inflammation.

Objective: The aim of this study was to determine the levels of serum and tissue cholesterol in children undergoing tonsillectomy by gas-liquid chromatography.

Methods: Eighty six children with an average age of 7.02±0.24 who referred to Tabriz Children’s Hospital were studied with signs of infection and large tonsils. Tonsillectomy was performed and tissues were evaluated by using hematoxylin-eosin technique. The sampling process lasted for one year from February 2010 to 2011. Patients were divided in two groups of hyperplasia (n=48) and chronic tonsillitis (n=38). The cholesterol content of serum and tonsillar tissues were extracted and measured by gas-liquid chromatography.

Findings: There was no significant difference in serum cholesterol between the two groups (P=0.32). However, the tonsillar cholesterol level in the chronic tonsillitis group was higher than the hyperplasia group (P=0.038). In the chronic tonsillitis group, the level of tissue cholesterol in the pathological grade 4 was significantly higher than other grades (P=0.009).

Conclusion: The level of tissue cholesterol in children with chronic tonsillitis was higher than those with tonsillar hyperplasia and this level was higher in tonsillitis with higher pathological grade.

Keywords: Cholesterol, Gas chromatography, Tonsil, Tonsillectomy, Hyperplasia, Children