

Bone gamma-carboxy glutamic acid-containing protein and Retinol Binding Protein-4, are they different in medullary thyroid carcinoma patients?

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Abstract:

Background: Medullary thyroid carcinoma (MTC) is the third most common of all thyroid cancers (5-8%). Medullary thyroid carcinoma (MTC) derives from Para follicular C cells and may developed in either sporadic (75%) or autosomal dominant hereditary form (25%). Osteocalcin (OC), also known as a bone gamma-carboxy glutamic acid-containing protein (BGLAP), is a bone protein which is synthesized by osteoblasts. Retinol Binding Protein-4 (RBP-4) is an adipokine in the circulation. Adipokines could regulate inflammation, immunity and carcinogenesis. The aims of this study were analysis the correlation between MTC and plasma levels of OC and RBP-4.

Material & methods: Forty six MTC patients and 44 individuals as control group were studied. The mean age of cases was 34 ± 11.3 years old (Mean \pm SD) and in control group was 38 ± 9.3 . After informed consent, 10 ml of blood from the antecubital vein obtained and plasma was isolated. The plasma OC and RBP-4 concentration were measured by sandwich ELISA method. Obtained results were analyzed by SPSS version 16 with independent t-test method.

Results: The plasma OC concentration were 33.1 ± 3.5 and 12.5 ± 1.2 ng/ml (Mean \pm SD) and Odds Ratio (OR) value was 1.0 among patients and control group respectively 1.04. In patients, mean plasma level of RBP-4 was 82.5 ± 2.7 and in control group was 22.8 ± 1.6 μ g/ml and OR value was 2.1. The confidence interval was 95%. These differences of plasma levels were statistically significant (P= 0.001).

Conclusion: This study has shown differences between plasma level of OC and RBP-4 in two mentioned groups. These increased levels were also seen in males and females affected with medullary thyroid carcinoma. As these increased levels were observed in both gender and different ages, so they could be related to medullary thyroid carcinoma and they are independent of sex and age, it may be consider that plasma concentration of OC and RBP-4 had potency for helping in diagnosis or confirmation of medullary thyroid carcinoma across the other markers.

Key words: Medullary thyroid carcinoma, OC, RBP-4.