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Salivary Leptin as a Potential Early Diagnostic Tumor Marker in Suspected Oral Cancer Patients
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Abstract

Leptin a 16-kDa peptide hormone plays an important regulatory role in basal metabolism and food intake. It is considered as a linkage between metabolism and the immune system. It plays a key role in different types of cancer due to its angiogenic, mitogenic, pro-inflammatory, and anti-apoptotic properties. The fact that leptin is associated with tumors and is produced and secreted by salivary glands prompted us to investigate the role of salivary leptin in the human salivary gland and evaluate salivary leptin hormone in suspected oral cancer patients and investigate the possible diagnostic relevance of salivary leptin hormone as a potential tumor marker. 36 individuals were included in this study, 20 controls and 16 suspected oral cancer patients. The salivary samples were obtained from both groups using a standardized method and the leptin levels were measured in the salivary samples by using Human LEP (Leptin) ELISA kit. Data analysis was performed using the Mann-Whitney U test for Social Sciences (SPSS version 24). The median leptin level for healthy control is 21.60 (20.26,24.08) pg/ml while it is 32.03 (27.38, 35.09) pg/ml for suspected oral cancer patients. A statistically significant difference in leptin levels is shown in suspected oral cancer patients compared to control. Therefore, this study suggests a promising diagnostic role of leptin hormone as a tumor marker in suspected oral cancer patients. © (2024), (University of Dicle). All Rights Reserved.

Author Keywords

Oral cancer; Salivary Leptin; Tumor Marker

References

- Mummudi, N, Agarwal, JP, Chatterjee, S, Mallick, I, Ghosh-Laskar, S.
Oral Cavity Cancer in the Indian Subcontinent - Challenges and Opportunities
(2019) *Clin Oncol*, 31 (8), pp. 520-528.
1
- Warnakulasuriya, S.
Global epidemiology of oral and oropharyngeal cancer
(2009) *Oral Oncol*, 45 (4-5), pp. 309-316.
2
- Han, FS, Lim, CM, Wong, LV, Zainal Abidin, M.
A 10 Years Retrospective Study of Oral Cancer in Oral and Maxillofacial Surgery Department, Queen Elizabeth Hospital Malaysia
(2017) *Malaysian Journal of Oral Maxillofacial Surgery*, 15 (1), p. 1016.
3. Accessed October 28, 2023
- Chen, PH, Mahmood, Q, Mariottini, GL, Chiang, TA, Lee, KW.
Adverse Health Effects of Betel Quid and the Risk of Oral and Pharyngeal Cancers
(2017) *Biomed Res Int*, 2017, p. 3904098.
4
- Obradovic, M, Sudar-Milovanovic, E, Soskic, S
Leptin and Obesity: Role and Clinical Implication

(2021) *Front Endocrinol (Lausanne)*, 12, p. 585887.

5. ∴. Published 2021 May 18

- Ramos-Lobo, AM, Donato, J.
The role of leptin in health and disease
(2017) *Temperature*, 4 (3), pp. 258-291.
6
- Ray, A, Cleary, MP.
The potential role of leptin in tumor invasion and metastasis
(2017) *Cytokine Growth Factor Rev*, 38, pp. 80-97.
7
- Linares, RL, Benítez, JGS, Reynoso, MO, Romero, CG, Sandoval-Cabrera, A.
Modulation of the leptin receptors expression in breast cancer cell lines exposed to leptin and tamoxifen
(2019) *Sci Rep*, 9 (1).
8
- Dutta, D, Ghosh, S, Pandit, K, Mukhopadhyay, P, Chowdhury, S.
Leptin and cancer: Pathogenesis and modulation
(2012) *Indian J Endocrinol Metab*, 16 (9), p. 596.
9
- Farr, OM, Gavrieli, A, Mantzoros, CS.
Leptin applications in 2015: what have we learned about leptin and obesity?
(2015) *Curr Opin Endocrinol Diabetes Obes*, 22 (5), pp. 353-359.
10
- Samad, N.
Role of Leptin in Cancer: A Systematic Review
(2019) *Biomed J Sci Tech Res*, 18 (1), pp. 13226-13235.
11
- Garofalo, C, Surmacz, E.
Leptin and cancer
(2006) *J Cell Physiol*, 207 (1), pp. 12-22.
12
- Sobrinho Santos, EM, Guimarães, TA, Santos, HO
Leptin acts on neoplastic behavior and expression levels of genes related to hypoxia, angiogenesis, and invasiveness in oral squamous cell carcinoma
(2017) *Tumour Biol*, 39 (5), p. 1010428317699130.
13
- Schapher, M, Wendler, O, Gröschl, M, Schäfer, R, Iro, H, Zenk, J.
Salivary leptin as a candidate diagnostic marker in salivary gland tumors
(2009) *Clin Chem*, 55 (5), pp. 914-922.
14
- Zhang, GA, Hou, S, Han, S, Zhou, J, Wang, X, Cui, W.
Clinicopathological implications of leptin and leptin receptor expression in papillary thyroid cancer
(2013) *Oncol Lett*, 5 (3), pp. 797-800.
15
- Hellström, L, Wahrenberg, H, Hruska, K, Reynisdottir, S, Arner, P.
Mechanisms behind gender differences in circulating leptin levels
(2000) *J Intern Med*, 247 (4), pp. 457-462.
16

- Aydin, S, Halifeoglu, I, Ozercan, IH
A comparison of leptin and ghrelin levels in plasma and saliva of young healthy subjects
(2005) *Peptides*, 26 (4), pp. 647-652.
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