

## Introduction

Laryngeal cancer is the second most common cancer of the upper digestive tract. It occurs more often in men than in women and tends to occur in the sixth and seventh decades. More than 95% of cases are squamous cell carcinoma. Although many genetic, environmental and etiological factors are correlated with the disease, the underlying molecular causes have not yet been fully elucidated.

## Experimental

In the experimental part, the concentration of total protein in laryngeal tissue homogenates from healthy and cancer patients will be initially determined. Then the concentration of HIF 1 $\alpha$ , GLUT 1, VEGF in the prepared tissue and blood serum homogenates will be determined. Determination of HIF 1 $\alpha$ , GLUT 1 and VEGF in homogenate supernatant will be performed using complete ELISA kits:- HIF 1 $\alpha$  concentrations with the HIF 1 $\alpha$  ELISA kit- GLUT 1 concentrations by ELISA method - (GLUT 1) Elisa kit- VEGF concentrations by ELISA method. The change in color of the solutions will be measured spectrophotometrically, and then the results will be read from the calibration curve made of the standards attached to the ready-made kits.

## Results

Hypoxia-induced factor -1 $\alpha$  (HIF-1 $\alpha$ ) is a transcription factor that activates many genes including vascular endothelial growth factor (VEGF) and glucose transporter-1 (GLUT-1) in response to hypoxia and promotes neoangiogenesis.

## Conclusion

HIF-1 $\alpha$ , VEGF and GLUT-1 expression can be analyzed by immunohistochemistry, and microvessel density is determined by immunostaining



## References

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2. Groblewska, M.; Mroczko, B.; Szmitkowski, M. The role of selected matrix metalloproteinases and their inhibitors in colorectal cancer development. *Postępy Hig Med. Dosw*, 2010; 64: 22-30.