

Expression of Leptin in Oral Squamous Cell Carcinomas

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ABSTRACT: Obesity is a formidable health concern due to its recognition as a risk factor for cancers of the breast, prostate, colon, and esophagus. Leptin is a cytokine secreted by the *ob* gene in white adipose tissue and released into the blood stream in greater quantities with obesity. The adipokine plays an important role in the regulation of food intake and energy consumption in the brain and acts as a growth stimulator in normal and neoplastic cancer cells. However, the effects of leptin on oral squamous cell carcinomas have not been thoroughly investigated. Recently, we reported that obesity-levels of leptin stimulated cell motility and invasion of cells derived from squamous carcinomas of the head and neck (HNSCC) *in vitro* through a mechanism involving the localization and activation of the cytoskeletal protein cortactin. Since many HNSCCs frequently overexpress cortactin, we determined the expression of leptin protein in 20 cases of oral squamous cell carcinoma by immunohistochemistry. Positive staining for leptin was detected in tumors and staining may be differentially expressed between normal and malignant epithelium. We are the first to report leptin expression in biopsied HNSCCs and this, together with overexpression of cortactin, may explain the enhanced growth and invasive potential of these tumors. This work broadens our understanding of the pathogenesis of HNSCC and identifies leptin as a potential new target in the management of head and neck squamous cell carcinoma in obese patients.