Transcription factors Snail, Slug, Twist, and SIP1 in spindle cell carcinoma of the head and neck.

Abstract:

Spindle cell carcinoma (SpCC) is a biphasic tumor composed of squamous cell carcinoma (SCC) and malignant spindle cells. There is mounting evidence that epithelial-mesenchymal transition (EMT) plays an important role in the pathogenesis of SpCC. Transcription repression has recently emerged as a fundamental mechanism triggering EMT in experimental models. Our aim is to analyze the expression of transcription repressors Snail, Slug, Twist, and SIP1 in SpCC of the head and neck in comparison to SCC, matched for location and stage. Thirty cases of SpCC and 30 cases of SCC of the head and neck were included. Snail, Slug, Twist, and SIP1 expression was analyzed on mRNA and protein levels, using real-time reverse transcription-polymerase chain reaction (RT-PCR) and immunohistochemistry. By RT-PCR, we found upregulation of mRNA for transcription factors Snail, Slug, Twist, and SIP1 in SpCC when compared to SCC. This upregulation was statistically significant for Slug, Twist, and SIP1 but nonsignificant for Snail. Immunohistochemistry was performed for Snail, Slug, and SIP1 and demonstrated a positive reaction for Slug and SIP1 in all cases and for Snail in two thirds of SpCC cases. Our finding of upregulation of all four tested transcription factors supports the hypothesis that EMT plays an important role in the pathogenesis of SpCC of the head and neck.