Original Paper

Histochemical study of cellular mucopolysaccharides in esophageal and gastric carcinoma and its relation to tumor differentiation

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Abstract

Background and Objective: Change in the cell surface and extracellular matrix glycoconjugates has been reported in many cancers. Moreover, diagnostic and prognostic importance of these substances and also their roles in therapeutic modalities for cancerous patients has been emphasized. This study was designed to explore the histochemical study of cellular mucopolysaccharides in esophageal and gastric carcinoma and its relation to tumor differentiation.

Materials and Methods: In this laboratory study tissue samples of 40 patients with esophageal squamous cell carcinoma and 40 patients with stomach adenocarcinoma in different grades of tumor were selected from pathology department of Emam Reza hospital in Mashhad, Iran. Tissue samples were stained with Alcian Blue (PH 1 and PH 2.5) for Sulfated and Carboxylated mucosubstances respectively, along with positive and negative controls.

Results: Normal esophageal epithelium and carcinoma cells of different grades showed negative reactivity but normal and tumoral stromal cells depicted positive staining in both PHs. In PH 1, normal glandular and carcinoma cells of the stomach were negative but in PH 2 glandular cells were positive though carcinoma cells showed weakly staining. Normal and tumoral gastric stromal cells showed positive staining in PH 1 and PH 2.5.

Conclusion: It is highly probable that in the process of cancerization of normal esophageal squamous cells, functional changes, from the perspective of producing Carboxylated and Sulfated mucosubstances, do not occur, whereas some changes in glandular cells of stomach which result in diminishing the production of Carboxylated mucosubstances during cancerization process are observable.

Keywords: Esophageal Squamous Cell Carcinoma, Stomach Adenocarcinoma, Tissue differentiation, Glycoconjugates, Alcian Blue

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