

## **Immunohistochemical Expression of C-reactive Protein in Barrett's Esophagus and Esophageal Adenocarcinoma.**

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### **PURPOSE:**

C-reactive protein (CRP) is synthesized in hepatocytes in response to inflammatory changes and is considered a marker of malignant potential in gastrointestinal tumors. Some descriptions of extrahepatic CRP synthesis are reported but neither in adenocarcinoma nor Barrett's intestinal metaplasia, on which this study focuses.

### **METHODS:**

A total of 19 patients were included, 18 with esophageal adenocarcinoma, 8 of those arising in Barrett's esophagus, and one patient with Barrett's metaplasia. 34 at -70°C stored sections were processed for histology (H&E) and immunohistochemistry using the ABC method and antibody specific for human CRP. Expression was semiquantitatively graded from 0 to 3.

### **RESULTS:**

12 patients had died with a mean survival of  $426 \pm 373$  days. In 18 samples of adenocarcinomas, weak to intense CRP expression occurred in 11 tumors and was negative in 7. In samples from the proximal normal esophagus area, expression was observed in 4 of 8. In Barrett's esophagus without malignant growth, grade 2 CRP expression occurred in the Barrett area as it did in all 7 samples of the Barrett area in cases of Barrett's carcinoma. Expression was observed in fibroblasts, mononuclear phagocytes, and endothelial cells. Glandular epithelial cells appeared to express CRP in Barrett areas and tumors. Tumor growth was observed in 93/430 lymph nodes (mean  $6.2 \pm 5.7/28.7 \pm 17.6$ ). Negative or weak CRP expression in normal esophagus area paralleled findings of 0 to 3 tumor positive lymph nodes except in one case (10/49).

### **CONCLUSIONS:**

This study demonstrated CRP expression in Barrett's esophagus and esophageal adenocarcinoma. It was observed in all samples of the Barrett area but in one half of the normal area of esophagus and in 60% of malignant tumors indicating that CRP expression is induced in histologically normal esophagus and downregulated after malignant transformation. Non-expressing normal esophagus area was in connection with more favorable tumor stage and improved patient outcome.

### **CLINICAL IMPLICATIONS:**

Esophageal CRP expression could serve as a clinical marker of malignant transformation and early predictor of patient outcome.