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Editorial

C-reactive protein titre(s) in oral cancers

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When acute inflammatory reactions occur in physiological and pathological situations, followed by injury, trauma, stress, and malignant illnesses, a broad class of plasma proteins known as acute phase proteins are released into the blood. In response to inflammatory illnesses, plasma levels of positive acute phase proteins (PAPPs) and negative acute phase proteins (NAPPs) rise and fall by at least 25%, respectively. While albumin, thyroxin binding protein, transthyretin, and insulin-like growth factor-1 are NAPPs, the most common PAPPs include C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), haptoglobin, fibrinogen, ceruloplasmin, and serum amyloid A.[1]

CRP is an acute phase protein that is a member of the pentraxins protein family. Its levels fluctuate daily and rise with age, blood pressure, smoking, coffee, and alcohol use, a high-protein diet, insulin resistance, diabetes, depression, and a decrease in physical activity all contribute to elevated triglyceride levels.[2] In 1930, while working on patients with *Streptococcus pneumoniae* infections in Oswald Avery's lab, William Tillet and Thomas Frances made the discovery of CRP. They discovered that patients' serum CRP can bind to the pneumococcal cell wall's C-polysaccharide element, which is why it's called "C-reactive protein."[3] Although the liver is the primary site of CRP production, its mRNA can also be found in other extra-hepatic locations, such as the respiratory tract epithelial cells, T-lymphocytes, adipose tissues, renal cortical tubule epithelial cells, and atherosclerotic plaques in smooth muscle cells and macrophages. Pro-inflammatory cytokines including interleukin (IL)-1, IL-6, and tumor necrosis factor, which are also seen in several cancers, control the synthesis of CRP in the hepatocytes. Latex slide agglutination, immune-turbidimetric, or immune-electrophoretic tests are used to quantify CRP levels. Labeled polyclonal or monoclonal anti-CRP antibodies are used in the high-sensitivity CRP assay, which is an enzyme-linked immunosorbent or immunofluorescent test. High sensitivity CRP levels (also known as hsCRP; defined as CRP levels <10 µg/ml) and conventional CRP levels (defined as CRP levels ≥ 10 µg/ml) were the two concentration criteria for CRP that were established.[4]

An essential part of the carcinogenesis process is inflammation. It is linked to the development, spread, and metastasis of cancer. CRP is a trustworthy indicator of inflammation. In addition to advanced cancers like inoperable non-small cell pulmonary cancer, non-resectable pancreatic cancer, biliary tract cancer, and metastatic brain diseases, the prognostic value of serum CRP has already been described in primary malignancies like esophageal, esophago-gastric, colorectal, hepatocellular, urinary bladder, ovarian, and cervical cancers, melanoma, and thymoma. Patients who have advanced malignant illnesses have a worse survival rate, which has been linked to elevated CRP. Patients with oral squamous cell carcinoma (OSCC) who had elevated serum CRP levels prior to treatment had the worst prognosis, and almost all of them passed away within five years, while those with normal CRP had survived even after five years of surgical resection, according to a study by Faraz et al[5]

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consequently, it was determined that in individuals with OSCC, elevated preoperative CRP levels are predictive indicators. High preoperative CRP levels are strongly linked to the development of oral cancer, according to a study by Sumit KD et al[6] on potentially malignant illnesses with elevated serum CRP levels. The study found very significant differences with different grades of dysplasia.

Because CRP assessment is quick, inexpensive, and simple to perform, and because it serves as a reliable independent biomarker for oral caners, dental surgeons would find it important and helpful to ascertain CRP levels both before and after surgery.

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