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**IL-8, Eotaxin and GCSF: potential immune biomarkers in colorectal cancer?**

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**ABSTRACT**

Soluble proteins including cytokines, chemokines and growth factors are involved in the pathogenesis of many diseases including cancers. The concentration of these proteins in biological fluids and tissues in diseases may suggest pathway activation that leads to inflammatory response or disease progression. Therefore, these soluble proteins may be useful as a tool for disease screening, diagnosis classification or treatment surveillance. The current gold standard such as ELISA and bioassay, detect a single protein at a time and are ineffective for screening purposes. Hence, multiplexing technology allows simultaneous measurement of these proteins, providing a rapid, cost effective and better efficiency using a minute amount of sample. In this study, we explored the profiles of key inflammatory cytokines, chemokines and growth factors from the serum of colorectal carcinoma patients (CRC, n =20), colorectal polyps patients (P, n =20) and healthy volunteers (N, n =20) using multiplexed bead-based immunoassays. We aimed to evaluate if the levels of these soluble proteins can classify these groups of populations and explore the possible applications of the soluble proteins as immune biomarkers in early stage screening and/or surveillance. We observed significant high IL-4, MIP-1β, FasL and TGF-β1 levels but lower levels for RANTES in P-derived serum as compared to N-derived serum. Significant high IL-8, VEGF, MIP-1β, Eotaxin and G-CSF observed in CRC-derived serum when compared to N-derived serum. Between CRC- and P-derived serum, significantly higher levels of IL-8, Eotaxin and G-CSF but lower levels for TGF-β1 were detected in CRC-derived serum. These preliminary results were obtained from small sample size and could be further validated with larger sample size cohort to produce a panel of biomarkers for CRC and P patients. Our findings might be useful in developing a disease-specific panel for biomarker screening assay. This could be used for early diagnosis and/or treatment surveillance.