

Abstract #152163

Evaluation of a Multi-Level, Multi-Parameter Detection Method for Digestive System Cancer Diagnosis
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Abstract Text:

Background: Despite efforts in recent years, major progress in cancer diagnosis remains to be elusive. Existing issues include inability to detect cancer early, relatively low sensitivity and specificity, side effects (for some imaging based technologies), and relatively high costs. In this work, an initial evaluation was carried out on diagnosis of two digestive cancer sites, hepatocellular carcinoma (HCC) and colorectal cancer, using a method named Cancer Differentiation Analysis technology (CDA) which measures both protein and cellular level information in blood in a single test. A performance comparison was made between CDA technology and traditional bio-marker method. **Methods:** Blood samples for HCC, colorectal cancer, and control groups were collected, and data were then taken with both bio-marker (serum alpha-fetoprotein (AFP) and carcinoembryonic antigen (CEA)) and CDA methods. **Results:** The measured CDA value showed significant statistical difference between the control (20 samples), HCC group (9 samples) and colorectal cancer (6 samples) with $P < 0.01$. In HCC group, CDA has a sensitivity of 77% (7 of 9) while AFP has a sensitivity of 33% (3 of 9), and specificity was comparable. In colorectal cancer, CDA has a sensitivity of 83% (5 of 6) while CEA has a sensitivity of 33% (2 of 6) with comparable specificity. Given the limited sample size, more data will be collected to further confirm the initial results. **Conclusions:** Based on preliminary, limited data using the new multi-level, multi-parameter blood test method (CDA technology) for HCC and colorectal cancer diagnostics, sensitivity was improved over the traditional bio-marker technology. **Keywords:** digestive system cancer diagnosis, colorectal cancer

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