

Towards Cancer Screening Using Circulating DNA

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There is much recent interest in the use of cell-free DNA in plasma for the liquid biopsies of cancer. Such work is mostly focused on the use of circulating DNA for the monitoring of subjects who have already been diagnosed to have cancer. There are much fewer efforts in exploring the use of cell-free DNA technologies for cancer screening. My group has previously demonstrated that cell-free Epstein-Barr virus (EBV) DNA in plasma is a powerful tumour marker for nasopharyngeal carcinoma (NPC). We have recently completed a large scale study on using circulating EBV DNA in the screening of NPC in 20,174 asymptomatic individuals in Hong Kong. This study demonstrates a dramatic shift to earlier stage NPC following plasma DNA screening. On follow up, the screened subjects have also demonstrated an improvement in progression-free survival as compared with an unscreened historical cohort. The implications of these results would be discussed.