Plasma level of adrenomedullin is influenced by a single nucleotide polymorphism in the adiponectin gene

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Objective: Adrenomedullin (ADM) and adiponectin are both adipokines associated with inflammation. The plasma level of these peptides is influenced by single nucleotide polymorphisms (SNPs) in the *ADM* and *ADIPOQ* genes, respectively. There is some evidence that ADM may regulate adiponectin gene expression, but whether adiponectin can regulate ADM expression is unclear. We investigated if *ADIPOQ* SNPs influence plasma ADM level.

Methods: Plasma ADM level was measured in 476 subjects in the Hong Kong Cardiovascular Risk Factor Prevalence Study-2 (CRISPS2). We genotyped them for two *ADIPOQ* SNPs that are known to be associated with plasma adiponectin level.

Results: The minor allele frequencies of *ADIPOQ* SNPs rs182052 and rs12495941 were 40.6% and 42.2%, respectively. Plasma ADM level was associated with rs182052 after adjusting for age and sex (β=0.104, P=0.023). In multivariate analysis, plasma ADM level increased with the number of minor alleles of rs182052 carried (P=0.013). Compared to subjects with GG genotype, subjects with AA genotype had 17.7% higher plasma ADM level (95% confidence interval: 3.6%-33.7%, P=0.013). In subgroup analysis, the association remains significant in diabetic patients (β=0.344, P=0.001) but not in normal subjects.

Conclusion: Plasma ADM level is related to SNP rs182052 in the *ADIPOQ* gene. The interaction between these two important peptides involved in obesity and inflammation warrants further study.

EBUS-TBNA gives adequate tissue information on cell type in lung cancer

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Introduction: In formulating systemic treatment in patients with advanced stage lung cancer, it is now considered imperative to know the cell type such as squamous carcinoma, adenocarcinoma and large cell carcinoma as chemotherapeutic agents would be tailored to treat different cell types. In the authors' centre, the adoption of using epidermal growth factor receptor (EGFR) tyrosine kinase inhibitors (TKI) as the first-line treatment has been the treatment of choice in patients shown to have activated EGFR mutation. Adequate tissue obtained during diagnostic procedures for cell typing and molecular profiling is therefore important in formulating personalised treatment in lung cancer patients nowadays.

Methods: Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) was performed under local anaesthesia in patients presented with mediastinal abnormality suspected of or confirmed lung cancer for diagnosis and staging purpose. Once malignancy was confirmed from the pathological materials, exact cell type, origin of tumour, differentiation were recorded. In the later phase of the study period since October 2008, molecular profiling was also deployed to confirm the EGFR mutation, ALK translocation status and Kras.

Results: Over the 4 years' study period started from August 2006, there were 269 EBUS-TBNA performed in 258 patients (median age 62 years, male 63.2%). Of the 209 patients (81%) confirmed having malignancy as their final diagnosis, EBUS-TBNA was able to detect malignancy in 162 patients, 25 (15.4%) of whom were having extrathoracic malignancy (breast, head and neck, renal, gastrointestinal, hepatobiliary, uterus and leiomyosarcoma) and primary lung cancer in 133 (63.6%). Among those 133 patients confirmed having primary lung cancer, 117 (88.0%) had exact cell type delineated: adenocarcinoma 50.4%, squamous cell carcinoma 13.5%, small cell carcinoma 10.5%, large cell carcinoma 6.8%, poorly differentiated carcinoma 6.0%, mucoepidermoid carcinoma 0.8%. For those 40 patients who had molecular profiling performed, patients with adequate tissue for EGFR mutation and/or ALK translocation and Kras mutation were obtained in 38 (95.0%). Of the 162 patients confirmed to have malignancy by EBUS-TBNA, only 20 (12.3%) had revealed non–small-cell lung cancer without knowing the exact cell type, differentiation of the tumour, EGFR status or primary origin of the tumour. In the 209 patients with final diagnosis of malignancy, the sensitivity was 87.4.0% and negative predictive value was 74.0%.

Conclusion: EBUS-TBNA is effective in subtyping of tumour cells and molecular profiling in patients with lung cancer.