S-RC-2

EXHALED NITRIC OXIDE (NO) LEVELS IN STEADY STATE BRONCHIECTASIS: A PROSPECTIVE SYSTEMATIC STUDY

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Endogenous NO production could be a key element to the pathogenesis of many inflammatory disorders including asthma, pulmonary fibrosis, and cystic fibrosis. Exhaled NO level is increased in asthma, but decreased in cystic fibrosis (CF) which is predominantly a disorder with severe bronchiectasis leading to death in respiratory failure. There has not been a systematic study of exhaled NO levels in non-CF bronchiectasis. We have therefore evaluated the level of exhaled NO in a cohort of steady state bronchiectasis patients and correlated its level with clinical parameters. Altogether 88 patients were recruited consecutively from the outpatient clinics of the University of Hong Kong (61F; mean age± SD 58.2± 14.1yrs; FEV_1 72.5±28.9% pred; FVC 81.5±23.3% pred; no. of bronchiectasis segment 2.5± 1.3; and 24h sputum 18.3±22.8ml) between June 1998 and November 1999. Exhaled NO was measured by using an automatic chemiluminescence analyzer (Sievers NO Analyser280) at a steady exhaled pressure of 20 torr. Exhaled NO was also measured from a cohort of healthy volunteers (n=43, 23F, 50± 10.6 yrs). There was no significant difference in the levels of exhaled NO between bronchiectasis and control subjects (26.8± 27.8, 26.7± 15.1 units; p>0.05). Amongst the bronchiectatsis patients, there was no significant difference between the levels of exhaled NO with age disease activity parameters including FEV1% pred (r=0.01, p=0.96), FVC% pred (0.19, 0.12), no. og lung lobes affected by bronchiectasis (0.21, 0.26), 24h sputum volume (-0.23, 0.06). Despite earlier reports on the potentials of using exhaled NO as a disease marker in bronchiectasis, our original findings show little clinical correlations of it with more conventional clinical disease severity markers. Further research should be perofrmed to confirm these findings.

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S-RC-3

A PILOT STUDY ON THE SERUM TELOMERASE ACTIVITY IN NON-SMALL CELL LUNG CANCER (NSCLC)

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Lung cancer is the top cancer killer in Hong Kong and almost always presents at advanced stages with little curative treatment option. There have been major preliminary researches worldwide on the potential tumour markers, which aim at early detection and prognostic stratification. Telomeres are specific structures found at the ends of chromosomes and consist of thousands of copies of 6 base repeats (TTAGGG). These serve to protect the chromosome ends. Telomerase is a ribonucleoprotein that compensates for telomere shortening during DNA replication, and thus stabilizes telomere length. Expression of telomerase activity in cancer cells might be a necessary and essential step for tumour development and progression. We have performed a pilot study on the detection of serum telomerase activity in NSCLC patients in order to determine its usefulness in early detection or prognosis. Eleven patients (4 males, mean age 56 years) with histologically or cytologically proven NSCLC were recruited. There were 9 adenocarcinomas, 1 squamous cell carcinoma, and 1 unclassified NSCLC. The tumour differentiation was categorised as well (n=5), moderate (n=3), poor (n=2), and unclassified (n=1). There were 2 in TNM stage 3A, 5 in stage 3B, and 4 in stage 4. Serum telomerase activity was detected by the Telomeric Repeat Amplification Protocol (TRAP) and ELISA assay (Oncor TRAPeze™ ELISA Kit, USA) which was non-quantitative. Amongst the patients tested, 2 were determined as having positive, 2 negative, and 7 equivocal telomerase activity. There were no difference in the cell type, histological grade, or TNM stage between the cases with positive and negative telomerase activity. The reasons for the equivocal activity could be due to protein contamination or presence of Taq polymerase inhibitors, which affected the sensitivity and specificity of the assay. We conclude from this pilot study that in some cases of NSCLC, serum telomerase activity can be detected with the TRAP assay. This warrants future research in the refinement of the assay to allow better detection of serum telomerase activity in NSCLC.