485. Smoking-related disorders

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Late-breaking abstract: Effectiveness of easy smoking cessation clinic in tertiary health care settings: Observational study of cohorts

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Introduction: Tobacco treatment programs should be offered in clinical settings for all smokers who need to quit smoking. We have co-operated with every units and departments in hospital and changed our service patterns of smoking cessation clinic into easy way. Cessation assistance was provided on working time every day except holiday. It requires approximately 20-30 minutes to complete and involves asking patients about smoking behavior and acting to help them quit. Telephone helpline was used to follow up and encourage smokers trying to continue quit smoking.
Methods: This is an observational study of cohorts of participants in smoking cessation clinic, Buddhachinnaraj hospital during June 1 to November 30, 2009. The main outcome measurements were self report abstinence rate at 6 and 12 months, and cost per quit.
Results: Over a period of 6 months, a cohort of 315 smokers were enrolled in this study.The self report abstinence rate at 6 and 12 months was 33.7% (106/315) and 27.9% (88/315).The mean cost per quit was 3,145 baht (70 Euro).Lost follow up rate by telephone helpline at 6 and 12 months was 18.4% and 27.6%.
Conclusions: Easy smoking cessation clinic is the intervention that are simple, cheap, and effective.Strategies for incorporating effective smoking cessation clinic into routine clinical care needs to become a key part of routine intervention for managing smoking cessation.

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LSC 2011 Abstract: Evaluation of morpho-functional changes in airways of young cigarette smokers

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We assumed that even in asymptomatic young smokers, with relatively short smoking duration and normal lung function, induced sputum could be found some changes indicative for early inflammatory process.
Aim: The aim of this study was to evaluate morpho-functional changes in airways of young cigarette smokers.
Method: We enrolled 23±3 years old 12 non-allergic smokers (1.59±0.67 pack-years) and 7 healthy non-smoking volunteers. Lung function measurements, sputum induction (IS) and sputum cell analysis were performed.
Results: Demographic data for both study groups did not differ significantly. Non-smokers and smokers had normal lung function indices. In smokers induced sputum contained statistically significantly (p=0.026) increased relative count of eosinophils 0.923 (0.355-1,753)% compared with non-smokers 0.069 (0.046 - 0.550)%. We also found significant reduction of absolute (r=0.482; p=0.037) and relative (r=0.682; p=0.004) count of bronchial epithelial cells in induced sputum that correlated to number of smoked pack-years. A trend towards statistical significance showed the correlation between smoked pack-years and the relative number of macrophages in induced sputum (r =0.402; p=0.0872). A trend towards statistical significance was also found in correlation between smoked pack-years and diminished FEV1% of predicted (r= - 0.463; p= 0.046).
Conclusion: In this study we showed that even smokers with short duration of the smoking habit have already initial signs of inflammation with eosinophil involvement.

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Cannabis use in patients with a primary spontaneous pneumothorax

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Introduction: It's Dutch policy to tolerate cannabis use. In literature active cannabis use is 10% amongst Dutch youth. The association between cannabis use and primary spontaneous pneumothorax (PSP) is unknown.
Aims: To determine the frequency of cannabis use in addition to tobacco smoking in patients with a PSP and to investigate the presence of underlying abnormalities on High Resolution CT (HRCT).
Methods: In a descriptive retrospective study patients were included who presented in a large Dutch teaching hospital with a PSP between august 2008 and august 2010. Because of an increased risk on secondary pneumothorax in older patients, only patients under 50 years were included. Age, gender, BMI, tobacco (T) and cannabis (C) use and (when available) HRCT data were recorded.
Results: In 2 years 53 patients presented with a PSP (42 male, 11 female, mean age 28 years, mean BMI 21). 74% (8% ex) smoked tobacco, 49% (8% ex) used cannabis (cannabis use unknown in 6%). The findings on HRCT are presented in Table 1.

Table 1. HRCT findings

	N (%) abnormal HRCT – N (%) blebs / N(%) bullae	N (%) normal HRCT	N (%) unknown
Total	30 (57) – 11 (37) / 19 (63)	10 (19)	13 (24)
C+T+ (no C without T)	15 (58) – 2 (13) / 13 (87)	3 (12)	8 (30)
C–T+	7 (70) – 3 (43) / 4 (57)	2 (20)	1 (10)
C–T–	6 (43) – 6 (100) / 0 (0)	5 (36)	3 (21)
C?T+	2 (67) – 0 (0) / 2 (100)	0 (0)	1 (33)

+ = use of, – = no use of, ? = unknown.

Conclusions: In patients under 50 years with PSP the use of cannabis was much higher than in the general population. However, all cannabis users also smoked tobacco. Only 12% of the cannabis users had a normal HRCT (30% unknown). On HRCT, bullae were present in 87% of cannabis users, in contrast to 57% in only tobacco smokers and none in nonsmokers.

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Cigarette smoke induces β2-integrin-dependent neutrophil migration across human umbilical vein endothelium

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Background: Cigarette smoking induces peripheral inflammatory responses in all smokers and is the major risk factor for neutrophilic lung diseases such as chronic obstructive pulmonary disease. The aim of this study was to investigate the effect of cigarette smoke on neutrophil chemotaxis and on β2-integrin activation and function in neutrophilic transmigration through endothelium.

Methods and results: Utilizing freshly isolated human neutrophils, the effect of cigarette smoke on chemotaxis and β2-integrin activation was studied. We demonstrate that cigarette smoke extract (CSE) dose dependently induced chemotaxis of neutrophils in vitro. Moreover, CSE promoted neutrophil adherence to fibrinogen. Using functional blocking antibodies against CD11b and CD18, it was shown that Mac-1 (CD11b/CD18) was responsible for the cigarette smoke-induced firm adhesion of neutrophils to fibrinogen. Furthermore, neutrophils transmigrated through endothelium by cigarette smoke due to the activation of β2-integrins, since pre-incubation of neutrophils with functional blocking antibodies against CD11b and CD18 attenuated this transmigration.
Conclusion: This is the first study to describe that cigarette smoke extract is a direct chemo-attractant for neutrophils and an activator of β2-integrins on the cell surface. Blocking this activation of β2-integrins might be an important target in cigarette smoke induced neutrophilic diseases.

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Waterpipe smoking and dependence are associated with chronic obstructive pulmonary disease: A case control study

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Waterpipe (WP) smoking is gaining in popularity in the Lebanese population. Although WP smokers are potentially exposed to the same noxious substances found in cigarettes, popular belief considers WP smoking harmless. Our objective was to evaluate the association between WP smoking, dependence and COPD.
We conducted a case-control study in two tertiary care hospitals. Cases were included if diagnosed as COPD by a chest physician and confirmed by a post-bronchodilator spirometry (FEV1/FVC<0.7); controls were included if free of any respiratory disease or symptom. After an oral informed consent, a standardized questionnaire was administered and spirometry results were collected by trained technicians.
211 COPD cases and 554 healthy controls were enrolled. In previous smokers, any type of smoking was associated with COPD: OR=28.3 (p<0.001) for cigarette smoking, OR=12.2 (p<0.001) for waterpipe smoking, and OR=41.9 (p<0.001) for mixed smoking. Lower odds ratios were found in current smokers: OR =19.6 (p<0.001) for cigarette smoking, OR=1.8 (p=0.299) for waterpipe smoking and OR=9.5 (p<0.001) for mixed smoking. However, assessing WP dependence by the validated LWDS-11 scale in current WP smokers, found an OR=15.0 (p=0.001) for the association between WP dependence and COPD. These results were confirmed by stratified and multivariate analysis, after adjustment for cigarette smoking and other potential confounding variables.
This is the first study that looked at the relation between COPD and WP smoking, and that showed a high risk of COPD in ex-smokers of WP. In current smokers of WP, dependent individuals have an increasing risk of COPD, as much as cigarette smokers.

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The mother's smoking during pregnancy influences on endothelial dysfunction in newborns

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Smoking during pregnancy is a risk for dangerous consequences. Smoking causes increased chances for miscarriage, growth restriction, preterm birth, and health problems in the future.
The aim of the investigation was to reveal effect of mother's tobacco smoking during pregnancy on endothelial dysfunction in newborn.
127 children born from mothers - smokers were examined. The control group was consisted of 32 healthy babies born from never smoking parents. A level of thiocyanate (a marker of passive smoking) was determined in a blood serum by spectrophotometry method. Levels of S-nitrosothiols and endotheline-1 were determined in blood serum by spectrophotometry and enzyme immunoassay methods respectively for the estimation of the endothelium dysfunction.
The levels of thiocyanate were 8,64±0,52 mg/l (high level – I group) and 3,75±0,21mg/l (low level – II group) in serum of babies born from mothers – smokers. The level of thiocyanate was 1,03±0,07mg/l in control group. The levels of S-nitrosothiols were 2,37±0,16 fmol/ml in I group (P1<0,001; P2<0,001) 1,29±0,11fmol/ml in II group (P2<0,001); 0,45±0,02fmol/ml in control. The levels of S-nitrosothiols were 0,18±0,01mmol/ml (P1<0,001; P2<0,001); 0,35±0,02 mmol/ml (P2<0,02), 0,53±0,02 mmol/ml in newborns of I, II and control groups respectively. P.S.: P1- vs. II group; P2- vs. control.
The tobacco derivatives came through placenta from mother-smoker to fetus. The endothelial dysfunctions are characterised by the decreasing of vasodilatator S-nitrosothiols and increasing of vasoconstrictor endotheline-1 level in newborn depended from level of thiocyanate.

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Smoking ages your lungs – Results from the COLD cohort

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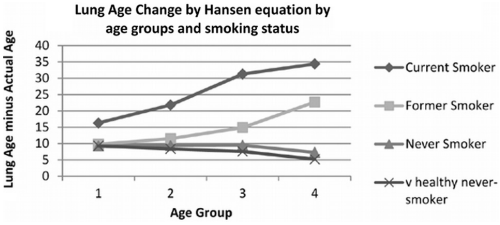
Background: Calculated Lung Age could be used as motivation to quit smoking. It is unknown whether smoking cessation results in improvement of Lung Age.
Hypothesis: We hypothesize that smoking cessation can reduce lung age.
Aim: To determine the lung age for current smokers, ex smokers and life long non-smokers using different lung age equations.
Methods: We calculated the change in Lung age by 4 different Lung Age equations: Morris [1985], Hansen [2010] Newbury [2010] and the COLD equation [2011]. We utilized the respiratory questionnaire data and pre and post bronchodilator spirometric data from 3,042 people aged 40 years and older in the Canadian Obstructive Lung Disease (COLD) study. Four groups of subjects were evaluated: current smokers, ex smokers, lifelong nonsmokers and a subgroup of lifelong nonsmokers who never had respiratory diseases or symptoms.
Results: The figure shows Lung age change by smoking status and by 4 age groups: 40-49 years; 50-59 years; 60-69 years; 70 years and older. The results from this cross sectional analysis from all 4 equations were consistent, and showed that active smoking is associated with faster aging of the lungs than life long non-smokers and "quitters"; lifelong non-smokers maintain normal lung age as they grow older; and active smoking is associated with greater lung aging than in "quitters", for the same tobacco load.



Conclusions: Smoking is associated with accelerated lung aging.

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The impact of smoke-free legislation on smoking-related emergency admissions in Istanbul

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Introduction: Reductions in exposure to tobacco smoke was shown to attenuate the risk of exacerbations of chronic respiratory and cardiac conditions both in adults and children. The aim of this study was to compare the changes in emergency department (ED) admissions for smoking-related diseases before and after the implementataion of smoking ban in Istanbul.
Methods: Admissions to ten major hospitals in Istanbul in the first five months of 2009 and 2010 were evaluated and compared, using International Classification of Diseases, (ICD-10) diagnostic codes.
Results: In 2009, there were 115030 ED admissions for the associated diagnostic codes, whereas this decreased to 87212 in 2010. There was a 16% decrease in acute nasopharyngitis, 32.9% decrease in pneumonia, 18.8% decrease in acute broncitis, 59,2% decrease in allergic rhinitis, 61.3% decrease in lower respiratory tract diseases, 21.4% decrease in chronic obstructive lung disease, 20,5% decrease in asthma, 33.6% decrease in ischemic heart disease and acute myocardial infarction. All differences were found statistically significant. Cost saving of emergency drugs and services on site were 437,104 euros for 10 hospitals in a 5 month period, which is projected to be 3,147,148 euros for Istanbul annually, without calculating the prevented hospital treatment cost.
Conclusion: ER admission rates for diseases associated with active and passive smoking were reduced by 24.2% as a result of smoking ban in Istanbul. Positive effects of clear indoor air ordinances are observed in a very short period, and therefore respiratory health professionals should be advocates for this policies against all odds.