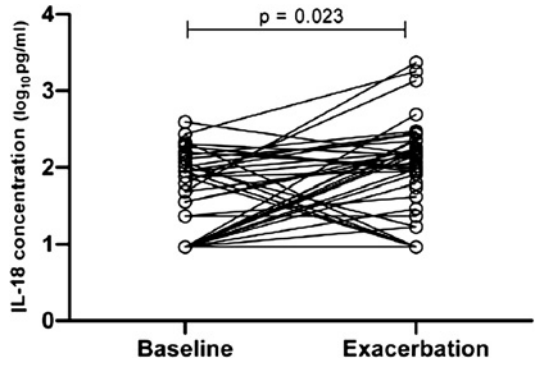

Abstract P119 Figure 1 Paired sputum IL-18 levels at baseline and exacerbation.

REFERENCE

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P120 COMPARISON OF CELLULAR INFLAMMATION AND TLR EXPRESSION PROFILES BETWEEN HEALTHY AND COPD SUBJECTS

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Introduction and Objectives Chronic obstructive pulmonary disease (COPD) is a complex inflammatory disease of the lungs Initiated by inhalation of toxic particles or gases. Periodic exacerbations triggered by respiratory pathogens are a major cause of morbidity/mortality in these patients. Microbial pathogens are recognised by pattern recognition receptors such as the toll-like receptors (TLRs), initiating innate immune defences. We hypothesised that abnormal TLR expression, and not resident inflammatory cell load in the lung parenchyma, contributes to exacerbation in COPD.

Methods Human lung tissue, distant from tumour margins, was taken from ex-smoker patients undergoing lobectomy for lung cancer. Patients were classified according to GOLD guidelines as healthy control subjects (HC) or those with COPD. Resected tissue was digested and cells analysed by flow cytometry for phenotypic markers of epithelial cells and inflammatory cell subtypes (macrophages, CD8 + and CD8− T lymphocytes) and the TLR2 and four expressions on these subtypes. Quantitative data of cell numbers and TLR staining intensity were compared using Mann–Whitney U tests.

Results Seven COPD patients and nine age-matched HC were analysed. No significant differences in the numbers of inflammatory or epithelial cells in the parenchymal tissue of these groups were observed, although a trend was observed to a reduction in macrophage numbers in the COPD group (median HC=4.2, median COPD=3.2 p=0.17). Similarly, no significant difference was found in the level ofTLR2 or TLR4 expression on any of the cell types examined. However, a trend was observed towards a decrease in TLR2 expression on epithelial cells in the COPD patients (median sMFI 3399 (HC) vs 2462 (COPD), p=0.094).

Conclusions This preliminary analysis has demonstrated that, as hypothesised, there was no significant difference in inflammatory cell load in parenchymal tissue between the two groups. The trend towards a reduced expression of TLR2 in the epithelial cells may reflect an abnormal down regulation of this receptor due to constant exposure to bacterial pathogens. The lack of surveillance of microbial pathogens by TLRs is a potential mechanism by which patients with COPD are more susceptible to infection by new bacterial strains and thus could contribute to exacerbation frequency.

P121 DIFFERENTIAL RESPONSES OF M1 AND M2 MONOCYTE-DERIVED MACROPHAGE PHENOTYPES IN COPD

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Introduction Inflammation in chronic obstructive pulmonary disease (COPD) is associated with increased numbers of highly activated macrophages with a reduced phagocytic capacity. Macrophages may exist as M1 "classically activated" or M2 "alternatively activated" with different phagocytic and inflammatory mediator profiles, suggesting in COPD a more persistent, M1 macrophage predominates. It is unknown whether circulating monocytes in COPD patients predetermine whether M1 macrophages will be preferentially activated, thus driving an inflammatory phenotype.

Objectives This study investigated differences between monocyte-derived macrophages (MDM) from non-smokers, smokers and COPD patients driven towards M1and M2 phenotypes.

Methods Monocytes were isolated from whole blood and cultured with GM-CSF (2 ng/ml) or M-CSF (100 ng/ml) for 12d to generate M1 and M2 MDM respectively. Cells were stimulated with LPS (0.01–100 ng/ml) for 24 h and TNFα, CXCL8 and IL-10 measured by ELISA. Phagocytosis was measured fluorimetrically following exposure to fluorescent beads, *H influenzae* or *S pneumoniae* for 4 h.

Results There were no differences in baseline release of any of the cytokines measured between subject groups. Cells released cytokines in response to LPS in a concentration-dependent manner. M1MDM derived from non-smokers and COPD patients released greater concentrations of LPS-stimulated (10 ng/ml) TNFα compared to M2 MDM. (Non-smokers: 7.4±2.3 vs 1.5±0.2 ng/ml, n=4; p<0.01; COPD: 7.0±1.8 vs 2.1±0.9 ng/ml, n=4) and significantly less IL-10 (Non-smokers: 0.4±0.2 vs 3.0±0.6 ng/ml, n=4; p<0.05; COPD: 0.3±0.04 vs 1.5±0.5 ng/ml, n=3) than M2 MDM. These differences were not apparent in cells from smokers. Both M1 and M2 MDM released LPS-stimulated CXCL8 similarly with no difference between subject groups. Phagocytosis of polystyrene beads was similar by both MDM phenotypes in all subject groups. However, there was a trend for M2 MDM to phagocytose more bacteria compared with M1 MDM which reached significance in healthy subjects (p<0.05).

Conclusions M1 and M2 MDM from non-smokers and COPD subjects showed distinct differences with respect to LPS-stimulated cytokine release and phagocytosis, however these differences were not apparent in cells from smokers without COPD. This suggests that smokers without COPD have altered circulating monocytes that do not differentiate into the pro-inflammatory M1 macrophage and may be protective against the development of COPD.

P122 NO ABSTRACT ASSIGNED TO THIS NUMBER

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Challenges in smoking cessation

P123 A RETROSPECTIVE COHORT STUDY OF THE LONG TERM EFFECTIVENESS OF SMOKING CESSATION COUNSELLING

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Introduction and Objectives A regional smoking cessation counselling service provides one-to-one counselling with follow-up by telephone and appointments for up to 1 year. Previously, no long-term

evaluations of such methods of smoking cessation have been conducted. This study aimed to establish how successful the service is 5–10 years following counselling.

Method Patients were interviewed by means of a telephone questionnaire. Their current smoking status was assessed and baseline data including previous smoking habits was recorded. The intervention group were patients who completed the programme and deemed non-smokers after 1 year. The control group were patients who were referred but failed to attend. Both groups were referred to the service between 2001 and 2005. Seventy-nine out of 202 patients were interviewed from the intervention group and 121 out of 752 patients from the control group were interviewed.

Results Of those previously attending the programme, 30.4% had relapsed. Of the 69.6% of participants remaining non-smokers, 85.5% had remained non-smokers throughout this follow-up period. Participants who did not attend were more likely to remain smokers (63.3%, p=<0.001, RR=2.08). Of those attending the programme, 70% reported using additional methods (eg, nicotine replacement therapy) to aid cessation. However, these individuals had a higher rate of relapse (36% vs 20%, p=0.080). Lower socio-economic status may also be linked to a higher relapse rate (p=0.075). Baseline statistics comparing the two cohorts revealed that patients from a lower socio-economic background were less likely to have successfully attended the programme (p=<0.001). Gender or number of pack years accumulated at the time of invitation were not significantly different between cohorts and patient age was similar (control=59 years, intervention=62 years). Median follow-up for both cohorts was 8 years.

Conclusions This unique 5–10 year follow-up indicates that smoking cessation counselling is achieving its aim of assisting the long-term cessation of patients attending the programme. However, patients requiring further interventions such as nicotine replacement therapy and those from lower socio-economic groups have been identified as requiring additional encouragement. This may indicate areas for improvement that smoking cessation programmes should consider.

P124 CHILDREN UNITE TO STOP SMOKING IN CARS

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It is well-established that second-hand cigarette smoke affects the health of everyone who is exposed to it. However, second-hand smoke is particularly dangerous for children, increasing their risk of developing asthma, chest infections and triggering asthma attacks. In addition, previous research shows that smoking just one cigarette in a car, even with the window open, creates a greater concentration of second-hand smoke than a whole evening's smoking in a pub. Hence, exposing children to second-hand smoke in a car is exceptionally hazardous. This study sought information regarding children's experiences of, and attitudes towards, being exposed to second-hand cigarette smoke, including exposure in cars. 1001 children aged 8–15 (51% male, 49% female) were surveyed online via a self-completion questionnaire between 20 and 27 January 2011. 51% of respondents had been in a car when someone has been smoking at some time. Of the 512 respondents who had been in a car while someone was smoking, 31% said they would ask them to stop, 24% said they were too embarrassed to ask them to stop, 9% said they were too scared to say anything and 21% said they didn't mind. All respondents were asked how they felt when an adult smokes near them. 58% said it made them smell of smoke, 49% said it made them feel sick, 44% said it made them cough and only 7% said it didn't bother them. 86% of all respondents said they would like the Government to stop people from smoking when children are in the car, with only 4% saying they would not and 10% saying they did not know. This survey shows that an overwhelming majority of children would support legislation to protect children from passive smoke in the car. This work also suggests that when exposed to second-hand smoke while travelling in a car, many children do not feel able to ask the smoker to stop. More work is needed to empower children and give them a voice to help change legislation around smoking in private cars and to increase awareness of the dangers of second-hand smoke.

Abstract P124 Table 1

	Children unite to stop smoking in cars					
	Children and exposure to smoke in cars - all respondents (1001)					
	Yes	**No**	**I don't know**	–	–	–
Ever been in a car when someone has been smoking	512 (51%)	473 (47%)	16 (2%)	–	–	–
Would you like the government to stop people smoking when children are in the car?	858 (86%)	44 (4%)	99 (10%)	–	–	–
	Children who have been exposed to second-hand smoke in cars—(512)					
	Ask them to stop	Nothing, too embarrassed to ask them to stop	Nothing, I don't mind it	Nothing, I'm too scared to say anything	Other	Don't know
What do you do when someone is smoking in the car?	158 (31%)	122 (24%)	105 (21%)	46 (9%)	59 (12%)	22 (4%)
	Children and exposure to second-hand smoke—all respondents (1001)					
	It makes me smell of smoke	It makes me feel sick	it makes me cough	Other	It doesn't bother me	Don't know
How does it make you feel when an adult smokes around you?	585 (58%)	486 (49%)	442 (44%)	72 (7%)	72 (7%)	31 (3%)

P125 STOP SMOKING AS TREATMENT FOR COPD: QUIT-INTERVENTIONS OF HIGHER INTENSITY AND DURATION ARE REQUIRED

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Introduction and Objectives Smoking cessation is one of the most cost-effective interventions for COPD (£2092/QALY; Hoogendoorn *et al* 2010). Smokers with COPD should therefore be offered