

P146 COGNITIVE LOSS IN STABLE NON-HYPOXAEMIC PATIENTS WITH MODERATE CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

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Background Cognitive impairment has been demonstrated in up to 77% of patients with COPD and hypoxaemia,¹ however it is unclear if this impairment is due to cognitive loss or was present before disease onset. In addition the evidence for impairment is less clear in patients with mild disease without hypoxaemia.

Methods Detailed neuropsychological testing of 44 non-exacerbating, non-hypoxaemic patients with COPD. Other physiological, and health status data were collected. Standardised neuropsychological scores were generated from age, gender and education related normative population samples. Cognition is considered moderately or severely impaired if a standardised score lie ≥ 1 or 2 standard deviations (SD) respectively from the normative population mean. The use of population normal range is valid given that the group have a normal estimated Full Scale IQ. Estimates of an individuals predicted cognitive performance in attention and processing speed are derived from their adult reading ability, which is stable over time and largely resistant to cognitive decline. Individuals performing below their predicted performance are judged to have suffered cognitive loss. This methodology has advantages over control group comparisons since the individual acts their own control allowing for calculations of what is 'normal' for that individual.

Results 44 patients, 52% Females, Mean Age 68 ± 8 years, FEV_{1pp} $49 \pm 20\%$, PaO₂ 10 ± 2 kPa, Pack Years. smoking 57 (41–69), 6MWD 387m (359–458), BMI 26 (23–29), SGRQ 52 ± 19 , Hospital Anxiety and Depression Scale 12 (6–19), Fatigue (FACIT-F) 18 (9–25), Estimated Full Scale IQ 96. In terms of cognitive loss, 25% had significant loss in processing speed and 30% in working memory. The proportion of patients whose cognitive scores were 1 and 2 SD's below predicted are tabulated.

Conclusion Up to one third of stable non-hypoxaemic patients with COPD demonstrate significant cognitive loss. A significant proportion have severe impairment of memory and executive function. The cause and implications of this cognitive loss should be the focus of future research.

Cognitive function	Moderate impairment (≥ 1 SD below mean)	Severe impairment (≥ 2 SD below mean)
Memory	66%	32%
Attention	48%	5%
Processing speed	50%	5%
Executive	73%	50%
Visuospatial	32%	16%

REFERENCE

- Grant, et al. Arch Intern Med 1982;142:1470.

P147 DEPRIVATION IS ASSOCIATED WITH INCREASED HEALTHCARE UTILISATION IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Deprivation assessed using the index of multiple deprivation (IMD) has been shown to be an independent risk factor for 1-year mortality in outpatients with chronic obstructive pulmonary disease; COPD (Collins *et al*, 2010). IMD combines a number of economic and social issues (eg, health, education, employment) into one overall deprivation score, the higher the score the higher an individual's deprivation. Whilst malnutrition in COPD has been linked to increased healthcare use it is not clear if deprivation is also independently associated. This study aimed to investigate the influence of deprivation on 1-year healthcare utilisation in outpatients with COPD. IMD was established in 424 outpatients with COPD according to the geographical location for each patient's address (postcode) and related to their healthcare use in the year post-date screened (Nobel *et al*, 2008). Patients were routinely screened in outpatient clinics for malnutrition using the 'Malnutrition Universal Screening Tool', 'MUST' (Elia 2003); mean age 73 (SD 9.9) years; body mass index 25.8 (SD 6.3) kg/m² with healthcare use collected 1 year from screening (Abstract P147 Table 1). Deprivation assessed using IMD (mean 15.9; SD 11.1) was found to be a significant predictor for the frequency and duration of emergency hospital admissions as well as the duration of elective hospital admission. Deprivation was also linked to reduced secondary care outpatient appointment attendance but not an increase in failure to attend and deprivation was not associated with increased disease severity, as classified by the GOLD criteria (p=0.580). COPD outpatients residing in more deprived areas experience increased hospitalisation rates but decreased outpatient appointment attendance. The underlying reason behind this disparity in healthcare use requires further investigation. Collins P.F. *et al*, (2010) presented at BTS winter meeting (SP165). Stratton R.J., *et al*, (2003) Disease-related malnutrition, CABI publishing; Elia M (Ed.) (2003) The 'MUST' report. BAPEN, Redditch (www.bapen.org.uk); Nobel *et al*, (2008) The English indices of deprivation 2007 (www.communities.gov.uk).

Abstract 147 Table 1

1-year healthcare use (n=424)	Mean (SD)	β -coefficient	p
No. of emergency hospital admissions	0.62 (1.5)	0.24	<0.001
Emergency length of hospital stay (days)	4.9 (13.2)	1.5	0.015
No. of elective hospital admissions	0.27 (0.75)	0	0.842
Elective admission length of hospital stay (days)	1.1 (7.2)	1.2	0.001
No. of secondary care outpatient appointments	3.7 (2.9)	-4.1	0.002

Adjusted using univariate analysis for age, gender, malnutrition risk ('MUST' risk) and disease-severity using multivariate analysis. Per patient in the cohort.=increase in resource use per 10 unit increase in IMD.*

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