

Incidence of Heart Failure, Atrial Fibrillation and Ischaemic Heart Disease in patients with Chronic Obstructive Pulmonary Disease registered with a General Practice within the Mid-Ulster Federation area

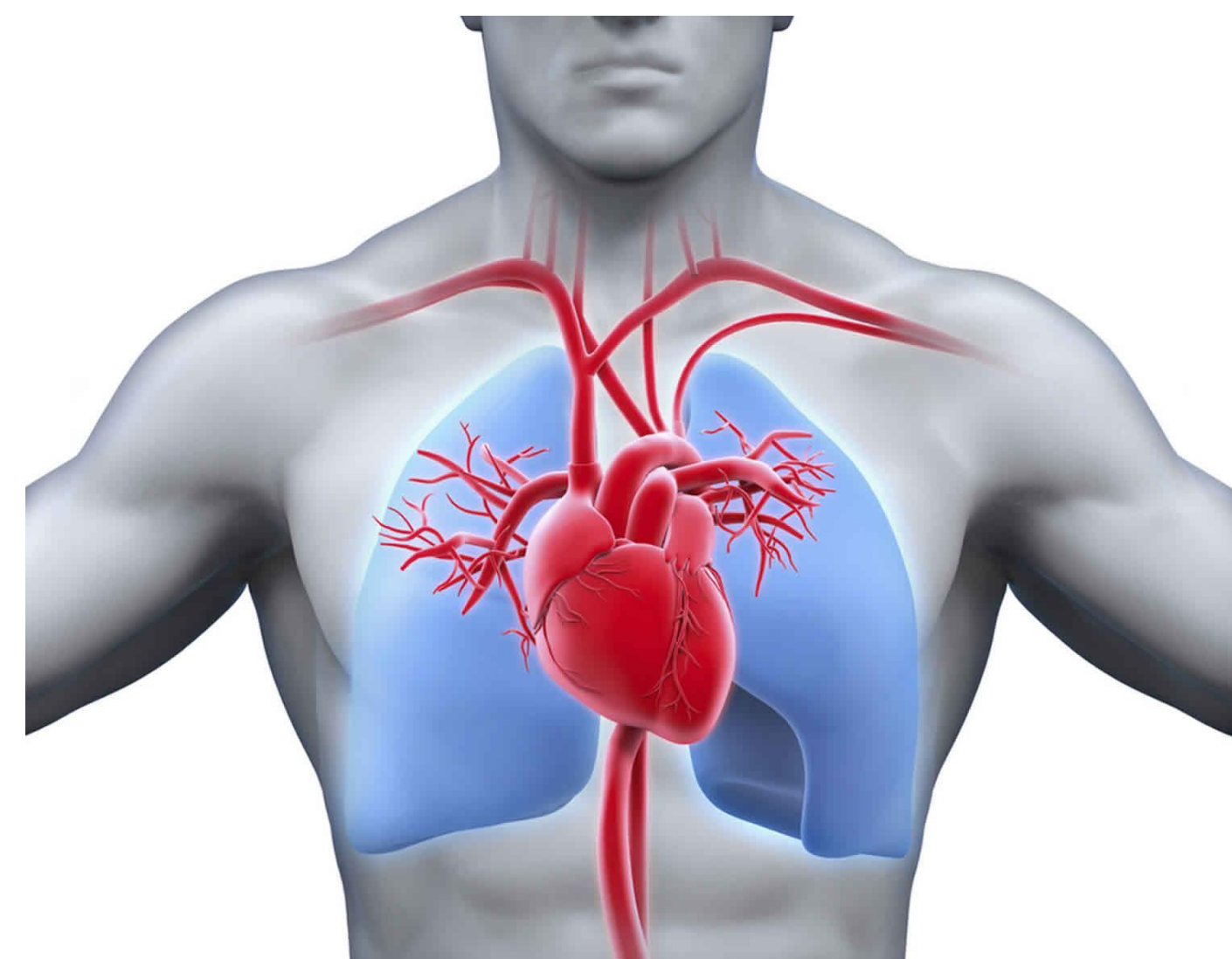
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Introduction

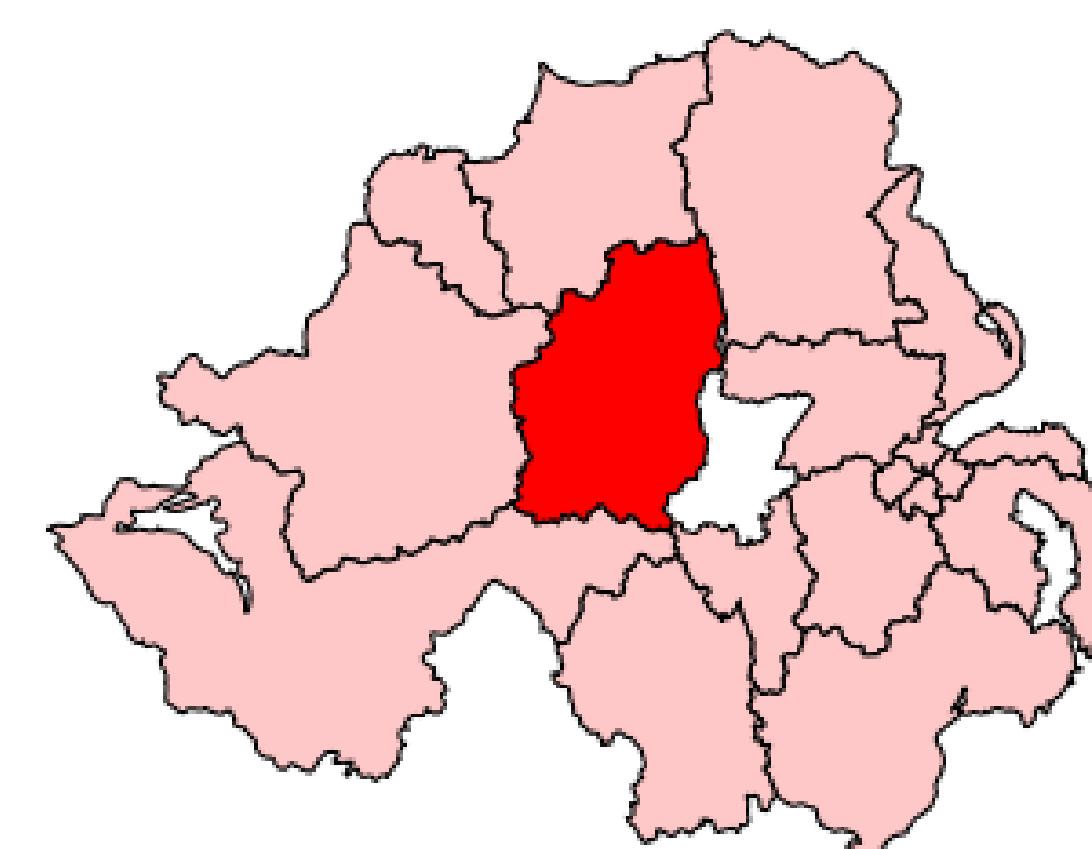


Cardiovascular disease (CVD) co-morbidities are one of the most common co-morbidities of Chronic Obstructive Pulmonary Disease (COPD) and have a negative effect in terms of exacerbations, hospital admissions, quality of life and mortality.

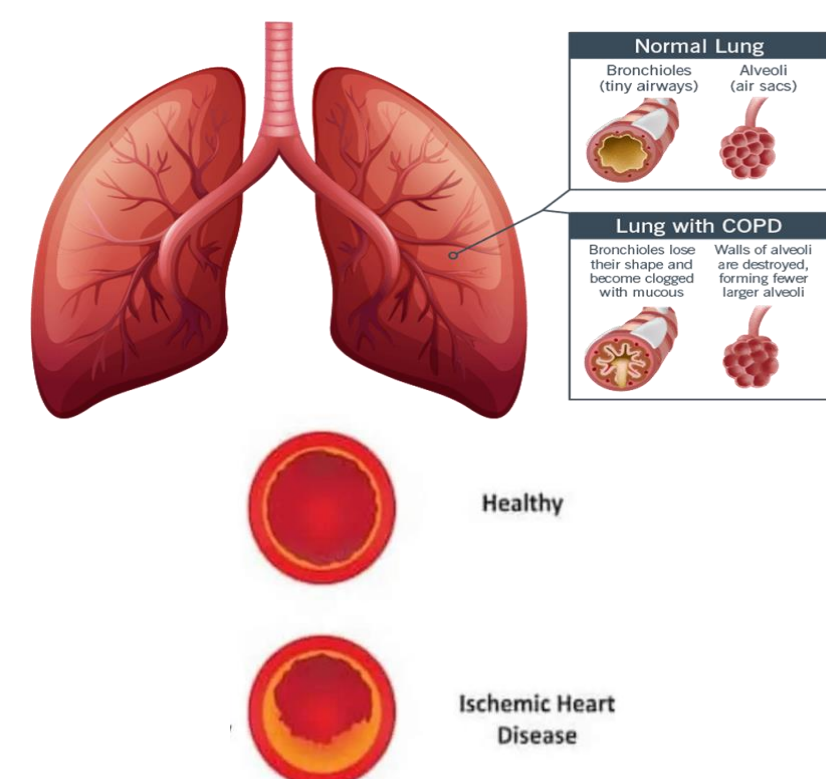
Research is needed to highlight the prevalence of these important co-morbidities to all healthcare professionals to improve the rate of their detection and diagnosis, thus improving management and outcomes for these patients

Aim

The overall aim of this project was to determine the prevalence of AF, HF, and IHD in patients diagnosed with COPD compared to the general population registered with a GP within the Mid-Ulster federation of GP practices. Data was also examined to determine any effect of gender, age and smoking status on the prevalence of AF, HF and IHD in patients with a COPD diagnosis



Method



Data collated from eleven GP practices within the Mid-Ulster Federation during April 2023 (n=77,979). Quality of Outcomes Framework (QOF) codes were used to identify patients with COPD and/or CVD. Searches were repeated for COPD patients (n=1575) during July 2023 to record patient gender, age and smoking status along with QOF register searches. Student's T Test to identify statistical significance and Chi-square test for independence were performed as appropriate. $p < 0.05$ were considered statistically significant.

Results

Table 1 shows the prevalence of atrial fibrillation was significantly higher for patients with COPD compared to the general population, 13.27% and 2.18% respectively. Heart failure prevalence was 7.05% for patients with COPD which was significantly higher than the general population prevalence of 0.91%. The prevalence of IHD was also significantly higher for patients with COPD at 21.66% compared to the general population prevalence of 5.07%.

The prevalence of AF, IHD and HF was significantly greater in male COPD patients than females. A greater number of COPD patients with HF and IHD had a history of smoking than those who had never smoked, however the difference was not found to be statistically significant ($p > 0.05$). A significantly greater proportion of never smokers had AF compared to current or ex-smokers.

Table 1. Mean number of patients and prevalence rates for cardiovascular conditions associated with COPD for patients registered with 11 GP practices within the Mid-Ulster Federation, Northern Ireland, April 2023 (n=77749).

Condition	Number of patients for the general population n=77749 (Mean +/- St Dev.)	Prevalence for the general population (Mean +/- St Dev)	Number of patients for the patients with COPD n= 1370 (Mean +/- St Dev.)	Prevalence for the patients with COPD (Mean +/- St Dev)	Statistically significant difference (Yes/No)	p value following t-test analysis
Atrial Fibrillation	151.45 +/- 43.33	2.18% +/- 0.29%	16.91 +/- 7.75	13.27% +/- 2.37%	Yes	p<0.001
Heart Failure	63.54 +/- 37.32	0.91% +/- 0.42%	9.27 +/- 6.23	7.05% +/- 3.13%	Yes	p<0.001
Ischaemic Heart Disease	354.09 +/- 203.07	5.07% +/- 2.49%	26.45 +/- 15.74	21.66% +/- 12.08%	Yes	p<0.001

Conclusion

This research highlights the need for timely diagnosis of CVD co-morbidities and holistic, multi-disciplinary care to ensure optimal management of COPD and CVD co-morbidities thus improving quality of life and outcomes for COPD patients.