

Prevalence and Predictors of Coronary Artery Disease in Patients Evaluated for Lung Transplantation

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Background

- Coronary angiography is the gold standard for evaluation of coronary artery disease despite a small but inherent risk of complications
- There is no clear consensus regarding use of functional testing to determine need for revascularisation and the mode of revascularisation

Purpose

To identify the prevalence, predictors and management of coronary artery disease in patients being considered for lung transplantation at The Alfred Hospital, Melbourne, Australia.

METHODS

- Inclusion criteria:** Patients referred for coronary angiography between 2010 and 2016 as part of lung transplant workup.
- Significant coronary artery disease was defined as at least one stenosis greater than 50% of the luminal diameter of a major epicardial coronary artery
- Primary Analysis:**
 - Identify prevalence of coronary artery disease
 - Identify clinical predictors of coronary disease
- Secondary outcome:**
 - Describe management of identified coronary artery disease and the subsequent cardiovascular outcomes
- The local ethics committee granted approval for this study.

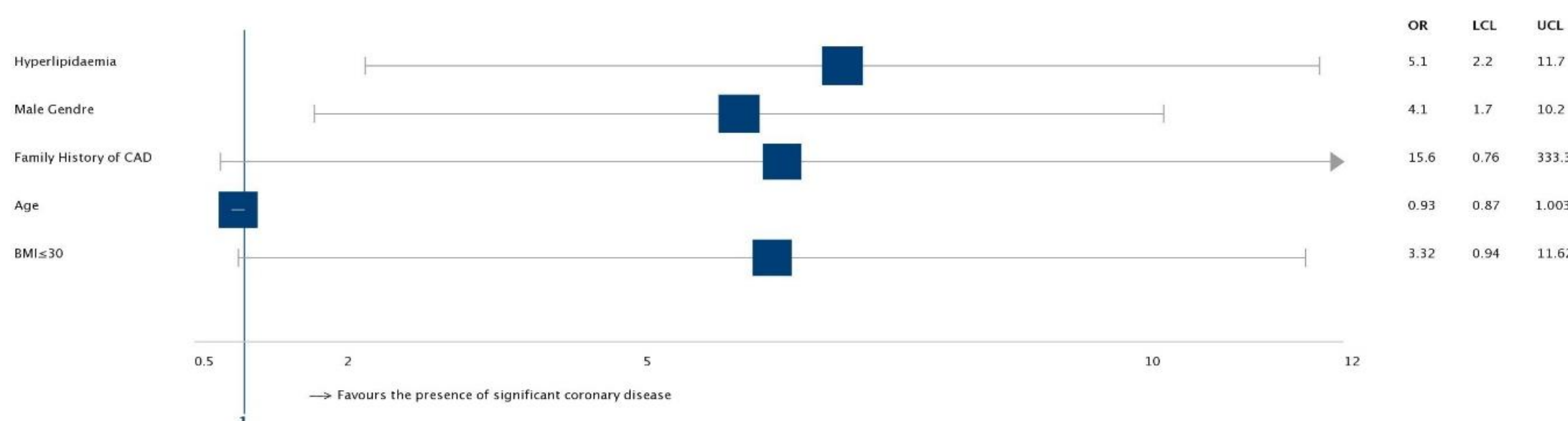
Results

- 244 patients were identified that underwent coronary angiography (table 1 baseline characteristics)
- Hyperlipidaemia and male gender were both independent predictors of CAD (figure 1)
- 41 (16.8%) patients were found to have significant CAD
- 20% (n=8) of these patients underwent pre-transplant revascularisation
- 80% (n=33) of patients were medically managed – 24% (n=8) based on negative functional test or FFR
- There were two perioperative cardiac arrests secondary to hypoxia in the medical group and none in the revascularized group

Table 1 – Baseline characteristics

	Significant CAD (n=41)	No significant CAD (N=203)	P-value
Pulmonary fibrosis % (n)	29.3 (12)	16.3 (33)	0.051
Pulmonary arterial hypertension % (n)	2.44 (1)	2.46 (5)	NS
Chronic obstructive airways disease % (n)	56 (23)	62 (126)	0.48
Other interstitial lung disease % (n)	12 (5)	19 (39)	NS
Hypertension % (n)	43.9 (18)	26.1 (53)	0.02
Diabetes Mellitus % (n)	19.5 (8)	9.3 (19)	0.058
Hyperlipidaemia % (n)	39 (16)	11.3 (23)	0.0001
Smoking history % (n)	73.2 (30)	76.9 (156)	0.61
Male Gender % (n)	78.1 (32)	54.7 (111)	0.0057
Family history % (n)	4.9 (2)	0.5 (1)	0.02
Age (mean)	60.9	58.7	0.03

Predictors of Significant Coronary Artery Disease on Multivariate Analysis



DISCUSSION

- Traditional cardiovascular risk factors were significant predictors of CAD in this population with the exception of smoking
- The prevalence of significant CAD was relatively low and in our institution the decision to revascularize is made in a multi-disciplinary meeting often guided by functional testing or angiographic appearance
- Our study demonstrates that the majority of patients with significant CAD can safely be managed medically without adverse cardiac events

CONCLUSIONS

Traditional risk factors in particular hyperlipidemia and male gender predicted CAD in this population. The majority of significant CAD was managed medically without adverse post operative cardiac complications. The best method of identifying and managing CAD in lung transplant candidates requires further study.