

Malignant Transformation of Intraductal Papillary Mucinous Neoplasm (IPMN): a Multi-centre Retrospective Analysis from the IPMN Registry

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Introduction

Pancreatic ductal adenocarcinoma (PDAC) is predicted to become the second most lethal cancer in Australia by 2030 and early detection of the cancer is crucial for timely surgical intervention [1]. Intraductal Papillary Mucinous Neoplasms (IPMN) are the most common radiological detectable precursor lesion to PDAC. Data from international cohorts demonstrates different malignant potentials for main duct and branch duct IPMNs. Multiple surveillance guidelines for IPMN have been proposed but there are still gaps in our knowledge of the natural history of these neoplasms.

Aims

We sought to create an IPMN database in Victoria, Australia to understand the natural history of this lesion.

Methodology

A multi-centre IPMN database was developed to collect data from five hospitals in Victoria, Australia. A retrospective cohort of patients with radiological evidence of an IPMN was collected from June 2016 to June 2017 and outcomes till June 2022 were obtained. Classification of the IPMN was based on the Fukuoka consensus [2]. The primary outcomes were developing a new Fukuoka risk factor, requiring endoscopic ultrasound (EUS), undergoing surgery, and being diagnosed with PDAC.

Results

Outcome (% within group)	High risk stigmata, n =15	Worrisome features, n = 46	No features, n =242	P-value
PDAC diagnosis	4 (26.7%)	2 (4.3%)	3 (1.2%)	<0.001
Surgery	1 (6.7%)	10 (21.7%)	2 (0.8%)	<0.001
EUS	5 (33.3%)	11 (23.9%)	34 (14.0%)	0.0504
Develop new Fukuoka features	1 (6.7%)	5 (10.9%)	10 (4.1%)	0.226
Death	1 (6.7%)	3 (6.5%)	1 (0.4%)	<0.001

Table 1: Proportion of patients who reached primary outcomes

Variable	Median (IQR) for numerical Freq (%) for categorical
Total sample subjects	303 (100%)
Median age at diagnosis, years	70 (60 - 78)
Female participants	170 (56.1%)
Charlson Comorbidity Index Score (CCI)	4 (2 - 6)
Severely comorbid subjects (CCI >=5)	140 (46.2%)
Current or ex-smokers	72 (23.76%)
Patients with cysts diagnosed elsewhere	129 (42.6%)
Main duct IPMN	13 (4.3%)
Side branch IPMN	224 (73.9%)
Mixed IPMN	14 (4.6%)
Indeterminate IPMN	52 (17.16%)

Table 2: Descriptive characteristics of the cohort

Conclusions

Classification of IPMN based on Fukuoka consensus correlates with the incidence of PDAC. The majority of those with or developing high-risk stigmata are not undergoing surgery. To further investigate the validity of the Fukuoka Consensus on the surveillance and treatment of IPMN, a prospective arm with a larger sample size, a more extended follow-up period and data on the clinical management of these patients is underway.



QR code for reference