

Assessment of CKD Risk Among Patients with Impaired Fasting Glucose in a Primary Care Setting

Shirley Y.K. CHOI, Eva L.Y. Cheng, Jessica J.H. HAN, Kennedy W.K. Leung, Maria K.W. LEUNG
Department of Family Medicine, the New Territories East Cluster, Hospital Authority, Hong Kong



Introduction

Chronic Kidney Disease (CKD) is a progressive condition defined by persistent kidney damage or reduced estimated glomerular filtration rate (eGFR <60 mL/min/1.73 m²). Patients with Impaired Fasting Glucose (IFG) are at increased risk of renal and cardiovascular complications. However, the burden of CKD in this group remains under-recognized in primary care. This study aimed to assess the CKD risk and its associated clinical factors among IFG patients in primary care setting.

Methods

IFG patients who attended Lek Yuen General Outpatient Department (GOPD) between July and December 2024 were identified from the Clinical Data Analysis and Reporting System (CDARS). Clinical and laboratory data from July 2023 to December 2024 were analysed. CKD was staged using KDIGO guidelines based on eGFR and urine albumin-to-creatinine ratio (urine ACR). Multiple linear regression was used to identify factors associated with eGFR.

Results

Table 1. Baseline Demographics and Clinical Characteristics

	N = 4309
Age, years	68.9 ± 10.2
Female, n (%)	2,420 (56.2%)
BMI, kg/m ²	25.6 ± 3.9
SBP, mmHg	133.5 ± 12.1
DBP, mmHg	74.4 ± 9.8
LDL, mmol/L	2.59 ± 0.79
HDL, mmol/L	1.44 ± 0.38
FBG, mmol/L	5.82 ± 0.56
HbA1c, %	6.1 ± 0.38
eGFR, mL/min/1.73 m ²	79.2 ± 16.1
Hypertension	3,648 (84.7%)
Hyperlipidaemia	2,787 (64.7%)
Using ACEI/ARB	1,890 (43.9%)

➤ Among 3,749 patients with valid eGFR, **88.2% were in G1–G2 and 11.8% in G3a–G5.**

➤ Of 2,030 with both eGFR and ACR data, **66.9% were low risk, 26.1 % moderate, and 7.0% high to very high risk of CKD progression.**

➤ **In multiple linear regression, older age, female sex, higher systolic BP , lower HDL, and higher BMI were significantly associated with lower eGFR (p< 0.05).**

Risk of CKD Progression

Low risk 66.9 %

Moderate Risk 26.1 %

High risk

Very high Risk 7%

Table 2. CKD Risk Stratification by KIDGO with eGFR and albuminuria distribution (N=2030)

GFR categories (mL/min/1.73m ²)		Persistent albuminuria categories		
		A1 Normal to mildly increased <3 mg/mmol	A2 Moderately increased 3-30mg/mmol	A3 Severely increased >30mg/mmol
G1	Normal or high ≥90	412 (20.3%)	139(6.8%)	20(1%)
G2	Mildly decreased 60-90	947(46.6%)	241(11.9%)	29(1.4%)
G3a	Mildly to moderately decreased 45-59	150(7.4%)	37(1.8%)	5(0.2%)
G3b	Moderately to severely decreased 30-44	32(1.5%)	8 (0.4%)	0
G4	Severely decreased 15-29	8(0.4%)	1(0.04%)	1(0.04%)
G5	Kidney Failure <15	0	0	0

Conclusion

Reduced eGFR is common among IFG patients in GOPD. Although most are at low risk of progression, early kidney damage may go undetected due to limited diagnostic data. Regular monitoring and kidney-protective strategies are crucial to reduce long-term risk.