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Early Detection of Diabetic Kidney Disease: From Guidelines to Practice

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Abstract

Diabetic kidney disease (DKD) is a leading cause of chronic kidney disease and end-stage renal failure globally, with a disproportionately high burden in South Asia. Despite clear screening recommendations from major guidelines such as ADA and KDIGO, early detection of DKD remains underutilized in routine practice. This review emphasizes the importance of timely identification using simple clinical tools like urine albumin-creatinine ratio (ACR) and estimated glomerular filtration rate (eGFR). Guideline-based protocols, practical challenges, and integration strategies are discussed. Proactive screening can delay disease progression, reduce cardiovascular risk, and improve outcomes.

Keywords: Diabetic Kidney Disease, Microalbuminuria, ACR, eGFR, ADA Guidelines, Early Detection, Type 2 Diabetes

Introduction

DKD affects up to 40% of individuals with T2DM and is a major contributor to ESRD globally. Early identification in primary care settings is vital for prevention and risk reduction [1,2].

Pathophysiology and Risk Factors

Hyperglycemia, oxidative stress, and RAAS activation contribute to glomerular damage. Risk factors include duration of diabetes, poor control, hypertension, and genetic predisposition [3].

Guideline Recommendations

ADA and KDIGO recommend annual screening via urine ACR and serum creatinine for eGFR. KDIGO 2022 emphasizes ACR/eGFR-based risk stratification [4,5].

Screening Tools in Practice

ACR: Spot urine test for microalbuminuria (30–300 mg/g)

eGFR: Based on CKD-EPI; <60 suggests CKD

Creatinine and BP add context

HbA1c offers glycemic correlation

Barriers to Implementation

Lack of awareness, cost, inconsistent lab availability, and limited physician focus on renal markers in diabetes management [6].

Strategies for Improvement

1. Incorporate ACR/eGFR in annual labs
2. EMR reminders
3. PCP training
4. Integrate with hypertension/lipid reviews
5. Educate patients on renal risks

Conclusion

Early detection using ACR and eGFR is critical in preventing DKD progression. Routine screening should be embedded in diabetes care.

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