MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: tmpxqe8gimf Title: Custom Case Analysis Generated: 2025-09-07 18:44

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Diabetic Nephropathy *Evidence: High confidence level (0.95), Specific ICD-10 code N08.3 provided, Consistent with diabetic kidney disease presentation*	N08.3	0.0%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Hypertensive Nephrosclerosis *Evidence: Moderate confidence level (0.6), ICD-10 code I12.9 provided*	I12.9	3.7%	Minority (<10%)
Chronic Glomerulonephritis *Evidence: Lower confidence level (0.4), ICD-10 code N03.9 provided*	N03.9	3.7%	Minority (<10%)
Ischemic Nephropathy *Evidence: Incomplete confidence data, Common differential for renal impairment*	N28.0	3.7%	Minority (<10%)
Analgesic Nephropathy *Evidence: Common drug-induced nephropathy, Often considered in differential diagnosis*	N14.0	3.7%	Minority (<10%)
Lupus Nephritis *Evidence: Autoimmune cause of nephropathy, Considered in younger patients*	M32.14	3.7%	Minority (<10%)
Membranous Nephropathy *Evidence: Primary glomerular disease, Common cause of nephrotic syndrome*	N05.2	3.7%	Minority (<10%)
IgA Nephropathy *Evidence: Most common glomerulonephritis worldwide, Often presents with hematuria*	N02.8	3.7%	Minority (<10%)
Acute Tubular Necrosis *Evidence: Common cause of acute kidney injury, Often ischemic or toxic etiology*	N17.0	3.7%	Minority (<10%)

Diagnosis	ICD-10	Support	Type
Obstructive Uropathy *Evidence: Structural cause of renal impairment, Considered in differential diagnosis*	N13.8	3.7%	Minority (<10%)
Amyloidosis *Evidence: Systemic disease affecting kidneys, Rare but important differential*	E85.9	3.7%	Minority (<10%)

Analysis Overview

Models Queried: 1

Successful Responses: 1

Consensus Level: High

Total Cost: <$0.01

■■ Free Model Disclaimer: This analysis was generated using free AI models

Free models may provide suboptimal results. For improved accuracy and reliability, consider using premium models with an API key.

Critical Decision Points & Evidence Synthesis

Critical Decision Points

Key areas where models showed significant divergence in diagnostic or management approach:

Evidence Synthesis & Clinical Correlation

Symptom-Diagnosis Correlation Matrix

Symptom	Diabetic	Hyperten	Chronic	Ischemic	Analgesi
Proteinuria	Strong	-	-	-	-
Elevated creati	-	-	Medium	-	-
Hypertension	-	Strong	-	-	-
Diabetes histor	Strong	-	-	-	-
Reduced GFR	-	-	-	Medium	-

Legend: +++ Strong association, ++ Moderate, + Weak, - Not typical

Diagnostic Decision Tree

Step	Action	If Positive	If Negative
1	Initial Laboratory Tests	→ Confirm suspicion	→ Broaden differential
2	Imaging Studies	→ Identify pathology	→ Consider specialized tests
3	Specialized Testing	→ Definitive diagnosis	→ Empiric treatment
4	Treatment Trial	→ Continue if effective	→ Reconsider diagnosis

Executive Summary

Case Description

A 64-year-old woman with a history of poorly controlled type 2 diabetes mellitus, long-standing hypertension, and diabetic retinopathy presents with gradually worsening fatigue, generalized pruritus, anorexia, and bilateral lower-extremity edema over the past month. She also reports nocturia and frothy urine for several years, but denies gross hematuria or flank pain.

On examination, her blood pressure is 168/92 mmHg, pulse 88/min, and she has periorbital puffiness with bilateral pitting pedal edema. Cardiovascular exam reveals a nondisplaced apex beat and no murmurs, while pulmonary exam is notable for bibasilar crackles. There is evidence of scratch marks on the skin consistent with pruritus.

Laboratory studies demonstrate a serum creatinine of 3.1 mg/dL (baseline 1.6 mg/dL one year prior), eGFR 22 mL/min/1.73 m², BUN 58 mg/dL, potassium 5.6 mmol/L, and bicarbonate 17 mmol/L. Urinalysis reveals 3+ proteinuria, bland sediment, and a urine protein-to-creatinine ratio of 5.2 g/g. HbA1c is 9.2%, and hemoglobin is 9.5 g/dL with normocytic indices. Renal ultrasound shows bilaterally small, echogenic kidneys without hydronephrosis.

Key Clinical Findings

Primary Recommendations

- Consider Diabetic Nephropathy among differential diagnoses
- Obtain Serum creatinine and eGFR for diagnostic confirmation

Primary Diagnosis Clinical Summaries

■ Key Clinical Findings

Finding	Supporting Evidence	Clinical Reasoning
Proteinuria	Clinical presentation	Key diagnostic indicator
Elevated creatinine	Clinical presentation	Key diagnostic indicator
Hypertension	Clinical presentation	Key diagnostic indicator
Diabetes history	Clinical presentation	Key diagnostic indicator
Reduced GFR	Clinical presentation	Key diagnostic indicator

■ Recommended Tests

Test Name	Type	Priority	Rationale
Serum creatinine and eGFR	Laboratory	Urgent	Diagnostic confirmation
Urine albumin-to-creatinine ratio	Laboratory	Urgent	Diagnostic confirmation
HbA1c	Laboratory	Urgent	Diagnostic confirmation
Complete blood count	Laboratory	Urgent	Diagnostic confirmation
Electrolytes including potassium	Laboratory	Urgent	Diagnostic confirmation

■ Immediate Management

Intervention	Category	Urgency	Clinical Reasoning
Initiate ACE inhibitor or ARB therapy	Medical	Immediate	Critical intervention
Refer to nephrologist	Medical	Immediate	Critical intervention
Implement strict glycemic control	Medical	Immediate	Critical intervention
Initiate blood pressure management	Medical	Immediate	Critical intervention
Implement dietary protein restriction	Medical	Immediate	Critical intervention

■ Medications

Medication	Dosage	Route/Frequency	Indication
Lisinopril	5-40 mg daily	Oral / Once daily	Renoprotection and blood pressure control
Losartan	25-100 mg daily	Oral / Once daily	Alternative renoprotection if ACE inhibitor not tolerated
Metformin	500-1000 mg	Oral / Twice daily	Glycemic control (adjust dose based on eGFR)
SGLT2 inhibitor (e.g., Empagliflozin)	10-25 mg daily	Oral / Once daily	Renoprotection and glycemic control

Diagnostic Landscape Analysis

Detailed Diagnostic Analysis

The ensemble analysis identified **Diabetic Nephropathy** as the primary diagnosis with limited consensus among 1 models.

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Hypertensive Nephrosclerosis *Evidence: Moderate confidence level (0.6), ICD-10 code I12.9 provided*	3.7%	1 models	Unlikely
Chronic Glomerulonephritis *Evidence: Lower confidence level (0.4), ICD-10 code N03.9 provided*	3.7%	1 models	Unlikely
Ischemic Nephropathy *Evidence: Incomplete confidence data, Common differential for renal impairment*	3.7%	1 models	Unlikely
Analgesic Nephropathy *Evidence: Common drug-induced nephropathy, Often considered in differential diagnosis*	3.7%	1 models	Unlikely
Lupus Nephritis *Evidence: Autoimmune cause of nephropathy, Considered in younger patients*	3.7%	1 models	Unlikely
Membranous Nephropathy *Evidence: Primary glomerular disease, Common cause of nephrotic syndrome*	3.7%	1 models	Unlikely
IgA Nephropathy *Evidence: Most common glomerulonephritis worldwide, Often presents with hematuria*	3.7%	1 models	Unlikely
Acute Tubular Necrosis *Evidence: Common cause of acute kidney injury, Often ischemic or toxic etiology*	3.7%	1 models	Unlikely

Minority Opinions

All alternative diagnoses suggested by any models with their clinical rationale:

• **Hypertensive Nephrosclerosis** (ICD-10: Unknown) - 3.7% agreement (1 models)

  Supporting Models: Unknown

• **Chronic Glomerulonephritis** (ICD-10: Unknown) - 3.7% agreement (1 models)

  Supporting Models: Unknown

- **Ischemic Nephropathy** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: Unknown
- **Analgesic Nephropathy** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: Unknown
- **Lupus Nephritis** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: Unknown
- **Membranous Nephropathy** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: Unknown
- **IgA Nephropathy** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: Unknown
- **Acute Tubular Necrosis** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: Unknown
- **Obstructive Uropathy** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: Unknown
- **Amyloidosis** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: Unknown

Additional Diagnoses Considered:

Management Strategies & Clinical Pathways

Immediate Actions Required

Priority	Action	Rationale	Consensus
1	Initiate ACE inhibitor or ARB therapy	Clinical indication	50%
2	Refer to nephrologist	Clinical indication	50%
3	Implement strict glycemic control	Clinical indication	50%
4	Initiate blood pressure management	Clinical indication	50%
5	Implement dietary protein restriction	Clinical indication	50%

Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
Serum creatinine and eGFR	Diagnostic confirmation	Routine	As indicated
Urine albumin-to-creatinine ratio	Diagnostic confirmation	Routine	As indicated
HbA1c	Diagnostic confirmation	Routine	As indicated
Complete blood count	Diagnostic confirmation	Routine	As indicated
Electrolytes including potassium	Diagnostic confirmation	Routine	As indicated
Renal ultrasound	Diagnostic confirmation	Routine	As indicated

Treatment Recommendations

Treatment recommendations pending diagnostic confirmation.

Model Diversity & Bias Analysis

Model Response Overview & Cost Analysis

Model	Origin	Tier	Cost	Diagnosis	Training Profile
deepseek-chat-v	China	Unknown	<$0.01	Diabetic Nephropathy	General

Total Estimated Cost: <$0.01

Understanding Training Profiles

Training profiles indicate the type and depth of medical knowledge in each model:

Comprehensive: Extensive medical literature training with broad clinical knowledge

Standard: Standard medical knowledge base with general clinical training

Regional: Region-specific medical training reflecting local practices and conditions

General: Broad general knowledge, not specifically trained on medical literature

Alternative: Alternative medical perspectives and non-conventional approaches

AI Model Bias Analysis

AI model bias analysis is generated during orchestration (Step 2). This comprehensive analysis examines cultural, geographic, and training data biases across the AI models used.

Detailed Model Responses

Complete diagnostic assessments from each model:

1. deepseek-chat-v (China, Released: 2024-12-26)

Primary Diagnosis: Diabetic Nephropathy (ICD-10: N08.3) - Confidence: 0.95

Differential Diagnoses:

- Hypertensive Nephrosclerosis (ICD: I12.9) - 0.6
- Chronic Glomerulonephritis (ICD: N03.9) - 0.4
- Ischemic Nephropathy (ICD: N28.0) - 0.3

Key Clinical Findings:

- Poorly controlled diabetes (HbA1c 9.2%)
- Nephrotic-range proteinuria (UPCR 5.2 g/g)
- Rapidly worsening renal function (Cr 3.1 mg/dL from baseline 1.6)
- Metabolic acidosis (bicarbonate 17 mmol/L)