MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: tmpq69a4de_ Title: Custom Case Analysis Generated: 2025-09-04 22:59

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever *Evidence: Genetic testing for MEFV gene mutations indicated, Serum amyloid A level testing recommended, Periodic fever syndrome pattern*	E85.0	0.0%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Periodic Fever Syndrome (other types) *Evidence: Alternative periodic fever syndrome consideration*	E85.0	3.7%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis *Evidence: Inflammatory markers elevation, Systemic symptoms*	M08.2	3.7%	Minority (<10%)

Analysis Overview
Models Queried: 3
Successful Responses: 3
Consensus Level: High
Total Estimated Cost: $0.039

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	FMF	Periodic	Systemic
periodic fever	Strong	-	-
inflammatory ma	Strong	-	-
genetic predisp	Strong	-	-

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

Diagnostic Decision Tree

Step	Action	If Positive	If Negative
1	MEFV Genetic Test	→ Confirm FMF, Start Colchicine	→ Proceed to Step 2
2	Extended Genetic Panel	→ Alternative periodic fever	→ Proceed to Step 3
3	Autoimmune Workup	→ Consider SLE/Still's	→ Consider IBD
4	Inflammatory Markers	→ Monitor progression	→ Reassess diagnosis

Executive Summary

Case Description

A 28-year-old male of Mediterranean descent presents with:
- Recurrent episodes of fever lasting 1-3 days
- Severe abdominal pain during episodes
- Chest pain with breathing difficulties
- Joint pain affecting knees and ankles
- Family history: Father and paternal uncle have similar symptoms
- Episodes occur every 2-3 weeks
- Labs during attack: Elevated CRP, ESR, and WBC
- Between attacks: Completely asymptomatic

Patient reports episodes started in childhood around age 7. Recent genetic testing is pending.

Key Clinical Findings

• Migratory arthritis affecting large joints
• Elevated inflammatory markers (CRP, ESR)
• Recurrent fever episodes
• Severe abdominal pain with peritoneal signs
• Positive family history of similar episodes

Primary Recommendations

• Consider Familial Mediterranean Fever among differential diagnoses
• Confirm FMF diagnosis with genetic testing
• Assess for acute attack severity
• Evaluate for amyloidosis complications
• Obtain MEFV gene mutation analysis for diagnostic confirmation

Primary Diagnosis Clinical Summaries

■ Key Clinical Findings

Finding	Supporting Evidence	Clinical Reasoning
MEFV gene mutation testing indicated	Clinical presentation	Key diagnostic indicator
Serum amyloid A level elevation	Clinical presentation	Key diagnostic indicator
Inflammatory markers present	Clinical presentation	Key diagnostic indicator
Periodic fever pattern	Clinical presentation	Key diagnostic indicator
High confidence diagnosis (95%)	Clinical presentation	Key diagnostic indicator

■ Recommended Tests

Test Name	Type	Priority	Rationale
MEFV gene mutation analysis	Laboratory	Urgent	Diagnostic confirmation
Serum amyloid A level	Laboratory	Urgent	Diagnostic confirmation
24-hour urine protein	Laboratory	Urgent	Diagnostic confirmation
Complete blood count with inflammatory markers	Laboratory	Urgent	Diagnostic confirmation
Comprehensive metabolic panel	Laboratory	Urgent	Diagnostic confirmation

■ Immediate Management

Intervention	Category	Urgency	Clinical Reasoning
Confirm FMF diagnosis with genetic testing	Medical	Immediate	Critical intervention
Assess for acute attack severity	Medical	Immediate	Critical intervention
Evaluate for amyloidosis complications	Medical	Immediate	Critical intervention
Initiate colchicine therapy	Medical	Immediate	Critical intervention

■ Medications

Medication	Dosage	Route/Frequency	Indication
Colchicine	0.6 mg	oral / twice daily	FMF attack prevention and treatment
Anakinra	100 mg	subcutaneous / daily	colchicine-resistant cases

Diagnostic Landscape Analysis

Detailed Diagnostic Analysis

The ensemble analysis identified **Familial Mediterranean Fever** as the primary diagnosis with 0.0% consensus among 1 models.

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Periodic Fever Syndrome (other types) *Evidence: Alternative periodic fever syndrome consideration*	3.7%	1 models	Unlikely
Systemic Juvenile Idiopathic Arthritis *Evidence: Inflammatory markers elevation, Systemic symptoms*	3.7%	1 models	Unlikely

Minority Opinions

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

• **Periodic Fever Syndrome (other types)** (ICD-10: R50.9) - 3.7% agreement (1 models)

Supporting Models: model1

• **Systemic Juvenile Idiopathic Arthritis** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: model1

Additional Diagnoses Considered:

Management Strategies & Clinical Pathways

Immediate Actions Required

Priority	Action	Rationale	Consensus
1	Confirm FMF diagnosis with genetic testing	Clinical indication	50%
2	Assess for acute attack severity	Clinical indication	50%
3	Evaluate for amyloidosis complications	Clinical indication	50%
4	Initiate colchicine therapy	Clinical indication	50%

Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
MEFV gene mutation analysis	Diagnostic confirmation	Routine	As indicated
Serum amyloid A level	Diagnostic confirmation	Routine	As indicated
24-hour urine protein	Diagnostic confirmation	Routine	As indicated
Complete blood count with inflammatory markers	Diagnostic confirmation	Routine	As indicated
Comprehensive metabolic panel	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	Familial Mediterranean Fever	General
gemma-2-9b-it	USA	Free	Free	Not specified	General
grok-4	USA	Premium	$0.037	Familial Mediterranean Fever	Alternative

Total Estimated Cost: $0.039

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: Familial Mediterranean Fever (ICD-10: E85.0) - Confidence: 0.95

Differential Diagnoses:

- Periodic Fever Syndrome (other types) (ICD: E85.0) - 0.7
- Systemic Juvenile Idiopathic Arthritis (ICD: M08.2) - 0.4
- Acute Intermittent Porphyria (ICD: E80.21) - 0.3

Key Clinical Findings:

- Mediterranean descent
- Recurrent self-limited febrile episodes
- Abdominal pain
- Chest pain

2. gemma-2-9b-it (USA, Released: 2024-06-27)

3. grok-4 (USA, Released: 2024-12-26)

Primary Diagnosis: Familial Mediterranean Fever (ICD-10: M04.1) - Confidence: 0.95

Differential Diagnoses:

- Tumor Necrosis Factor Receptor-Associated Periodic Syndrome (ICD: M04.1) - 0.3
- Mevalonate Kinase Deficiency (Hyper-IgD Syndrome) (ICD: M04.1) - 0.25
- Cryopyrin-Associated Periodic Syndrome (ICD: M04.2) - 0.2

Key Clinical Findings:

- Recurrent fever episodes lasting 1-3 days every 2-3 weeks
- Severe abdominal pain, chest pain with breathing difficulties, and joint pain in knees/ankles during episodes
- Family history of similar symptoms in father and paternal uncle
- Mediterranean descent with symptoms starting in childhood