MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: tmpw8xadj86 Title: Custom Case Analysis Generated: 2025-09-05 19:41

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever *Evidence: Both models agree on FMF diagnosis, High confidence scores (0.95 and 0.85), Consistent ICD coding alignment*	E85.0	0.0%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Periodic Fever Syndrome (other types) *Evidence: High confidence score (0.7), Similar ICD code to primary diagnosis*	E85.0	3.7%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis *Evidence: Moderate confidence score (0.4), Autoinflammatory condition*	M08.2	3.7%	Minority (<10%)
Autoinflammatory Syndromes (Other) *Evidence: Broad category of similar conditions, Low confidence score (0.10)*	M30.9	3.7%	Minority (<10%)
Gout *Evidence: Acute inflammatory arthritis, Low confidence score (0.08)*	M10.0	3.7%	Minority (<10%)
Psoriatic Arthritis *Evidence: Inflammatory arthritis pattern, Partial symptom overlap*	M07.3	3.7%	Minority (<10%)
Rheumatic Fever *Evidence: Not mentioned but possible differential*	I00	0.0%	Minority (<10%)
Adult Still's Disease *Evidence: Not mentioned but possible differential*	M06.1	0.0%	Minority (<10%)
Behçet's Disease *Evidence: Not mentioned but possible differential*	M35.2	0.0%	Minority (<10%)
Cryopyrin-Associated Periodic Syndromes *Evidence: Not mentioned but possible differential*	E85.0	0.0%	Minority (<10%)

Diagnosis	ICD-10	Support	Type
Inflammatory Bowel Disease Arthritis *Evidence: Not mentioned but possible differential*	M07.40	0.0%	Minority (<10%)

Analysis Overview

Models Queried: 2

Successful Responses: 2

Consensus Level: High

Total Estimated Cost: <$0.01

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	Autoinfl	Gout
recurrent fever	Strong	Strong	-	-	-
abdominal pain	Strong	-	-	-	-
arthritis	Medium	-	Strong	-	Medium
rash	-	-	-	-	-
ethnic predispo	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

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

Primary Recommendations

• Consider Familial Mediterranean Fever among differential diagnoses
• Initiate colchicine therapy
• Provide patient education about FMF and attack triggers
• Assess for signs of amyloidosis complications
• Obtain MEFV gene mutation analysis for diagnostic confirmation

Primary Diagnosis Clinical Summaries

■ Key Clinical Findings

Finding	Supporting Evidence	Clinical Reasoning
recurrent fever episodes	Clinical presentation	Key diagnostic indicator
abdominal pain	Clinical presentation	Key diagnostic indicator
arthralgia/arthritis	Clinical presentation	Key diagnostic indicator
ethnic background (Mediterranean)	Clinical presentation	Key diagnostic indicator
family history of similar symptoms	Clinical presentation	Key diagnostic indicator

■ Recommended Tests

Test Name	Type	Priority	Rationale
MEFV gene mutation analysis	Laboratory	Urgent	Diagnostic confirmation
Serum amyloid A (SAA) level	Laboratory	Urgent	Diagnostic confirmation
C-reactive protein (CRP)	Laboratory	Urgent	Diagnostic confirmation
Erythrocyte sedimentation rate (ESR)	Laboratory	Urgent	Diagnostic confirmation
Complete blood count with differential	Laboratory	Urgent	Diagnostic confirmation

■ Immediate Management

Intervention	Category	Urgency	Clinical Reasoning
Initiate colchicine therapy	Medical	Immediate	Critical intervention
Provide patient education about FMF and attack triggers	Medical	Immediate	Critical intervention
Assess for signs of amyloidosis complications	Medical	Immediate	Critical intervention

■ Medications

Medication	Dosage	Route/Frequency	Indication
Colchicine	0.5-2.0 mg daily	Oral / Once or twice daily	Prophylaxis against FMF attacks and prevention of amyloidosis
Anakinra	1-2 mg/kg daily	Subcutaneous / Daily	For colchicine-resistant FMF or severe breakthrough attacks

Diagnostic Landscape Analysis

Detailed Diagnostic Analysis

The ensemble analysis identified **Familial Mediterranean Fever** as the primary diagnosis with 0.0% consensus among 2 models.

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Periodic Fever Syndrome (other types) *Evidence: High confidence score (0.7), Similar ICD code to primary diagnosis*	3.7%	1 models	Unlikely
Systemic Juvenile Idiopathic Arthritis *Evidence: Moderate confidence score (0.4), Autoinflammatory condition*	3.7%	1 models	Unlikely
Autoinflammatory Syndromes (Other) *Evidence: Broad category of similar conditions, Low confidence score (0.10)*	3.7%	1 models	Unlikely
Gout *Evidence: Acute inflammatory arthritis, Low confidence score (0.08)*	3.7%	1 models	Unlikely
Psoriatic Arthritis *Evidence: Inflammatory arthritis pattern, Partial symptom overlap*	3.7%	1 models	Unlikely
Rheumatic Fever *Evidence: Not mentioned but possible differential*	0.0%	0 models	Unlikely
Adult Still's Disease *Evidence: Not mentioned but possible differential*	0.0%	0 models	Unlikely
Behçet's Disease *Evidence: Not mentioned but possible differential*	0.0%	0 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
- **Autoinflammatory Syndromes (Other)** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: model2

- **Gout** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: model2
- **Psoriatic Arthritis** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: model2
- **Rheumatic Fever** (ICD-10: Unknown) - 0.0% agreement (0 models)
  Supporting Models:
- **Adult Still's Disease** (ICD-10: M06.1) - 0.0% agreement (0 models)
  Supporting Models:
- **Behçet's Disease** (ICD-10: Unknown) - 0.0% agreement (0 models)
  Supporting Models:
- **Cryopyrin-Associated Periodic Syndromes** (ICD-10: Unknown) - 0.0% agreement (0 models)
  Supporting Models:
- **Inflammatory Bowel Disease Arthritis** (ICD-10: K50.9) - 0.0% agreement (0 models)
  Supporting Models:

Additional Diagnoses Considered:

Management Strategies & Clinical Pathways

Immediate Actions Required

Priority	Action	Rationale	Consensus
1	Initiate colchicine therapy	Clinical indication	50%
2	Provide patient education about FMF and attack triggers	Clinical indication	50%
3	Assess for signs of amyloidosis complications	Clinical indication	50%

Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
MEFV gene mutation analysis	Diagnostic confirmation	Routine	As indicated
Serum amyloid A (SAA) level	Diagnostic confirmation	Routine	As indicated
C-reactive protein (CRP)	Diagnostic confirmation	Routine	As indicated
Erythrocyte sedimentation rate (ESR)	Diagnostic confirmation	Routine	As indicated
Complete blood count with differential	Diagnostic confirmation	Routine	As indicated
Urinalysis for proteinuria	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	Familial Mediterranean Fever	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: 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:

- Recurrent febrile episodes lasting 1-3 days
- Severe abdominal pain during attacks
- Chest pain with breathing difficulties
- Joint pain in knees and ankles

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

Primary Diagnosis: Familial Mediterranean Fever (FMF) (ICD-10: M01.1) - Confidence: 0.85

Differential Diagnoses:

- Autoinflammatory Syndromes (Other) (ICD: M30.9) - 0.1
- Gout (ICD: M10.0) - 0.08
- Psoriatic Arthritis (ICD: M06.1) - 0.07

Key Clinical Findings:

- Recurrent episodes of fever with abdominal pain
- Chest pain and breathing difficulties during episodes
- Joint pain affecting knees and ankles
- Family history of similar symptoms