MEDLEY

Medical AI Ensemble Clinical Decision Report

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Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever *Evidence: Recurrent fever episodes, Abdominal pain, Ethnic predisposition, Short duration attacks*	E85.0	0.0%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Periodic Fever Syndrome (other types) *Evidence: Recurrent fever pattern, Autoinflammatory nature, Similar clinical presentation*	E85.8	3.7%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis *Evidence: Fever episodes, Systemic inflammation, Arthritic symptoms*	M08.2	3.7%	Minority (<10%)
Appendicitis *Evidence: Abdominal pain, Fever*	K35	0.0%	Minority (<10%)
Inflammatory Bowel Disease *Evidence: Abdominal pain, Systemic inflammation*	K50-K52	0.0%	Minority (<10%)
Rheumatic Fever *Evidence: Fever episodes, Inflammatory markers*	I00-I02	0.0%	Minority (<10%)
Lyme Disease *Evidence: Fever, Systemic symptoms*	A69.2	0.0%	Minority (<10%)
Malaria *Evidence: Periodic fever, Systemic illness*	B54	0.0%	Minority (<10%)
Tuberculosis *Evidence: Fever, Systemic inflammation*	A15-A19	0.0%	Minority (<10%)
Systemic Lupus Erythematosus *Evidence: Fever episodes, Autoimmune features*	M32	0.0%	Minority (<10%)
Viral Infection *Evidence: Fever, Systemic symptoms*	B34	0.0%	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	FMF	Periodic	Systemic	Appendic	IBD
Fever	Strong	Strong	Medium	-	-
Abdominal pain	Strong	-	-	Strong	Medium
Ethnic predispo	Strong	-	-	-	-
Short duration	Strong	-	-	-	-
Response to col	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

• Severe abdominal pain with peritoneal signs
• Recurrent fever episodes
• Positive family history of similar episodes
• Migratory arthritis affecting large joints

Primary Recommendations

• Consider Familial Mediterranean Fever among differential diagnoses
• Obtain Genetic testing for MEFV gene mutations 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
Short duration attacks	Clinical presentation	Key diagnostic indicator
Ethnic predisposition	Clinical presentation	Key diagnostic indicator
Response to colchicine	Clinical presentation	Key diagnostic indicator

■ Recommended Tests

Test Name	Type	Priority	Rationale
Genetic testing for MEFV gene mutations	Laboratory	Urgent	Diagnostic confirmation
Serum amyloid A (SAA) and C-reactive protein (CRP) during attacks	Laboratory	Urgent	Diagnostic confirmation
Complete blood count with differential	Laboratory	Urgent	Diagnostic confirmation
Erythrocyte sedimentation rate (ESR)	Laboratory	Urgent	Diagnostic confirmation
Urinalysis for proteinuria (amyloidosis screening)	Laboratory	Urgent	Diagnostic confirmation

■ Immediate Management

Intervention	Category	Urgency	Clinical Reasoning
Initiate colchicine therapy	Medical	Immediate	Critical intervention
Provide patient education about FMF and treatment	Medical	Immediate	Critical intervention
Assess for signs of acute attack requiring NSAIDs	Medical	Immediate	Critical intervention
Evaluate for amyloidosis risk factors	Medical	Immediate	Critical intervention

■ Medications

Medication	Dosage	Route/Frequency	Indication
Colchicine	0.5-2.4 mg daily	Oral / Daily	Prophylaxis against FMF attacks and prevention of amyloidosis
Ibuprofen	400-800 mg	Oral / Every 6-8 hours as needed	Symptomatic relief of pain and inflammation during acute attacks

Diagnostic Landscape Analysis

Detailed Diagnostic Analysis

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

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Periodic Fever Syndrome (other types) *Evidence: Recurrent fever pattern, Autoinflammatory nature, Similar clinical presentation*	3.7%	1 models	Unlikely
Systemic Juvenile Idiopathic Arthritis *Evidence: Fever episodes, Systemic inflammation, Arthritic symptoms*	3.7%	1 models	Unlikely
Appendicitis *Evidence: Abdominal pain, Fever*	0.0%	0 models	Unlikely
Inflammatory Bowel Disease *Evidence: Abdominal pain, Systemic inflammation*	0.0%	0 models	Unlikely
Rheumatic Fever *Evidence: Fever episodes, Inflammatory markers*	0.0%	0 models	Unlikely
Lyme Disease *Evidence: Fever, Systemic symptoms*	0.0%	0 models	Unlikely
Malaria *Evidence: Periodic fever, Systemic illness*	0.0%	0 models	Unlikely
Tuberculosis *Evidence: Fever, Systemic inflammation*	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: Unknown

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

    Supporting Models: Unknown

• **Appendicitis** (ICD-10: Unknown) - 0.0% agreement (0 models)

    Supporting Models:

• **Inflammatory Bowel Disease** (ICD-10: K50.9) - 0.0% agreement (0 models)

    Supporting Models:

• **Rheumatic Fever** (ICD-10: Unknown) - 0.0% agreement (0 models)

    Supporting Models:

• **Lyme Disease** (ICD-10: Unknown) - 0.0% agreement (0 models)

    Supporting Models:

• **Malaria** (ICD-10: Unknown) - 0.0% agreement (0 models)

    Supporting Models:

• **Tuberculosis** (ICD-10: Unknown) - 0.0% agreement (0 models)

    Supporting Models:

• **Systemic Lupus Erythematosus** (ICD-10: M32.9) - 0.0% agreement (0 models)

    Supporting Models:

• **Viral Infection** (ICD-10: Unknown) - 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 treatment	Clinical indication	50%
3	Assess for signs of acute attack requiring NSAIDs	Clinical indication	50%
4	Evaluate for amyloidosis risk factors	Clinical indication	50%

Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
Genetic testing for MEFV gene mutations	Diagnostic confirmation	Routine	As indicated
Serum amyloid A (SAA) and C-reactive protein (CRP) during attacks	Diagnostic confirmation	Routine	As indicated
Complete blood count with differential	Diagnostic confirmation	Routine	As indicated
Erythrocyte sedimentation rate (ESR)	Diagnostic confirmation	Routine	As indicated
Urinalysis for proteinuria (amyloidosis screening)	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

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: E85.8) - 0.7
- Systemic Juvenile Idiopathic Arthritis (ICD: M08.2) - 0.4
- Inflammatory Bowel Disease (ICD: K50.9) - 0.3

Key Clinical Findings:

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