MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: custom_20250908_202455 Title: Custom Case Generated: 2025-09-08 20:25

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever	E85.0	100.0%	Very High	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Periodic Fever Syndrome (other types)	E85.8	100.0%	Strong Alt (≥30%)
Systemic Juvenile Idiopathic Arthritis	M08.2	100.0%	Strong Alt (≥30%)
PFAPA Syndrome	M04.8	100.0%	Strong Alt (≥30%)
Acute Intermittent Porphyria	E80.21	100.0%	Strong Alt (≥30%)

Analysis Overview

Models Queried: 1

Successful Responses: 1

Consensus Level: 0.95

Total Cost: <$0.01

■■ Free Model Disclaimer: This analysis was generated using free AI models and a free orchestrator
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/Finding	Familial Med	Periodic Fev	Systemic Juv	PFAPA Syndro
Pain	-	-	-	-
Fever	+++	+++	+++	+++
Joint Symptoms	-	-	-	-

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

• Recurrent fever episodes
• Migratory arthritis affecting large joints

Primary Recommendations

• Strong consensus (100.0%) supports diagnosis of Familial Mediterranean Fever
• Obtain MEFV gene testing for diagnostic confirmation

Primary Diagnosis Clinical Summaries

Diagnostic Landscape Analysis

Detailed Diagnostic Analysis

The ensemble analysis identified **Familial Mediterranean Fever** as the primary diagnosis with 100.0% consensus among 1 models.

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Periodic Fever Syndrome (other types)	100.0%	1 models	Should be considered
Systemic Juvenile Idiopathic Arthritis	100.0%	1 models	Should be considered
PFAPA Syndrome	100.0%	1 models	Should be considered
Acute Intermittent Porphyria	100.0%	1 models	Should be considered

Minority Opinions

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

Additional Diagnoses Considered:

- **Periodic Fever Syndrome (other types)** (ICD-10: E85.8) - 100.0% (1 models)
- **Systemic Juvenile Idiopathic Arthritis** (ICD-10: M08.2) - 100.0% (1 models)
- **PFAPA Syndrome** (ICD-10: M04.8) - 100.0% (1 models)
- **Acute Intermittent Porphyria** (ICD-10: E80.21) - 100.0% (1 models)

Diagnostic Confidence Analysis

Management Strategies & Clinical Pathways

Immediate Actions Required

Priority	Action	Rationale	Consensus
1	Genetic testing for FMF	Clinical indication	50%
2	Colchicine trial	Clinical indication	50%
3	Inflammatory markers monitoring	Clinical indication	50%

Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
MEFV gene testing	Diagnostic confirmation	Routine	As indicated
Serum amyloid A	Diagnostic confirmation	Routine	As indicated
CRP levels	Diagnostic confirmation	Routine	As indicated
Erythrocyte sedimentation rate	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 Cost: <$0.01 (Models: <$0.01 + Orchestrator: <$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.

Primary Diagnosis Bias Factors:

- Cultural: Models from 6 countries with Western dominance may miss cultural factors. Chinese models (500.0%) provide alternative perspective.
- Geographic: Western model dominance (2500.0%) creates strong bias toward Western medical paradigms. High Western medical paradigm influence expected
- Training Data: English-dominant training data creates systematic bias against non-Western medical practices and symptom presentations.

Alternative Diagnoses Bias:

- Missed: Traditional Medicine Conditions - Western model dominance may miss traditional medicine diagno...
- Missed: Socioeconomic-Related Conditions - Homeless status bias may cause dismissive attitudes and miss...

Bias Mitigation Recommendations:

- Socioeconomic Bias: Consider cultural context in diagnosis interpretation
- Geographic/Cultural Bias: Incorporate diverse cultural perspectives in diagnosis

Detailed Model Responses

Complete diagnostic assessments from each model:

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