

# MEDLEY

## Medical AI Ensemble Clinical Decision Report

Case ID:  
custom\_20250909\_085412      Title: Custom Case

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### Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever <i>Evidence: Mediterranean descent, Recurrent fevers lasting 1-3 days, Severe abdominal pain during episodes, Chest pain with breathing difficulties</i>	E85.0	0.0%	Very Low	PRIMARY

### Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Periodic Fever Syndrome (other types) <i>Evidence: Recurrent fevers, Severe abdominal pain, Chest pain</i>	E85.8	3.7%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis <i>Evidence: Recurrent fevers, Joint pain</i>	M08.2	3.7%	Minority (<10%)
Juvenile Idiopathic Arthritis <i>Evidence: Recurrent fevers, Joint pain</i>	M05.2	3.7%	Minority (<10%)
Reactive Arthritis <i>Evidence: Joint pain, Recurrent fevers</i>	M45.1	3.7%	Minority (<10%)
Ankylosing Spondylitis <i>Evidence: Joint pain, Recurrent fevers</i>	M91.2	3.7%	Minority (<10%)
Crohn's Disease <i>Evidence: Abdominal pain, Recurrent fevers</i>	K50.2	3.7%	Minority (<10%)
Uveitis <i>Evidence: Eye pain, Recurrent fevers</i>	H20.9	3.7%	Minority (<10%)
Behcet's Disease <i>Evidence: Recurrent fevers, Mouth ulcers, Genital ulcers</i>	M35.2	3.7%	Minority (<10%)
Takayasu's Arteritis <i>Evidence: Recurrent fevers, Vascular symptoms</i>	M31.0	3.7%	Minority (<10%)
Wegener's Granulomatosis <i>Evidence: Recurrent fevers, Respiratory symptoms</i>	M31.3	3.7%	Minority (<10%)

Analysis Overview	
Models Queried:	4
Successful Responses:	4
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	Juvenile	Reactive	Ankylosi	Crohn's	Uveitis
Recurrent fever	Strong	Strong	Strong	Strong	Strong	Strong	Strong	Strong
Severe abdomina	Strong	Strong	-	-	-	-	Strong	-
Chest pain	Strong	Strong	-	-	-	-	-	-
Joint pain	Strong	Strong	Strong	Strong	Strong	Strong	-	-
Mediterranean d	Strong	-	-	-	-	-	-	-
Family history	Strong	-	-	-	-	-	-	-
Elevated CRP, E	Strong	-	-	-	-	-	-	-
Inter-attack as	Strong	-	-	-	-	-	-	-
Symptoms starte	Strong	-	-	-	-	-	-	-
Genetic testing	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)
- Positive family history of similar episodes
- Recurrent fever episodes
- Severe abdominal pain with peritoneal signs

## Primary Recommendations

- Consider Familial Mediterranean Fever among differential diagnoses
- Obtain Complete blood count (CBC) for diagnostic confirmation

## Primary Diagnosis Clinical Summaries

### ■ Key Clinical Findings

Finding	Supporting Evidence	Clinical Reasoning
Mediterranean descent	Clinical presentation	Key diagnostic indicator
Recurrent fevers lasting 1-3 days	Clinical presentation	Key diagnostic indicator
Severe abdominal pain during episodes	Clinical presentation	Key diagnostic indicator
Chest pain with breathing difficulties	Clinical presentation	Key diagnostic indicator
Joint pain affecting knees and ankles	Clinical presentation	Key diagnostic indicator

### ■ Recommended Tests

Test Name	Type	Priority	Rationale
Complete blood count (CBC)	Laboratory	Urgent	Diagnostic confirmation
C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR)	Laboratory	Urgent	Diagnostic confirmation

### ■ Immediate Management

Intervention	Category	Urgency	Clinical Reasoning
Initiate colchicine therapy	Medical	Immediate	Critical intervention
Order genetic testing for MEFV gene mutations	Medical	Immediate	Critical intervention

### ■ Medications

Medication	Dosage	Route/Frequency	Indication
Colchicine	1.2 mg	oral / once daily	Prophylaxis of FMF attacks

# Diagnostic Landscape Analysis

## Detailed Diagnostic Analysis

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

## Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Periodic Fever Syndrome (other types) <i>Evidence: Recurrent fevers, Severe abdominal pain, Chest pain</i>	3.7%	1 models	Unlikely
Systemic Juvenile Idiopathic Arthritis <i>Evidence: Recurrent fevers, Joint pain</i>	3.7%	1 models	Unlikely
Juvenile Idiopathic Arthritis <i>Evidence: Recurrent fevers, Joint pain</i>	3.7%	1 models	Unlikely
Reactive Arthritis <i>Evidence: Joint pain, Recurrent fevers</i>	3.7%	1 models	Unlikely
Ankylosing Spondylitis <i>Evidence: Joint pain, Recurrent fevers</i>	3.7%	1 models	Unlikely
Crohn's Disease <i>Evidence: Abdominal pain, Recurrent fevers</i>	3.7%	1 models	Unlikely
Uveitis <i>Evidence: Eye pain, Recurrent fevers</i>	3.7%	1 models	Unlikely
Behcet's Disease <i>Evidence: Recurrent fevers, Mouth ulcers, Genital ulcers</i>	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: Unknown
- **Systemic Juvenile Idiopathic Arthritis** (ICD-10: Unknown) - 3.7% agreement (1 models)  
Supporting Models: Unknown
- **Juvenile Idiopathic Arthritis** (ICD-10: Unknown) - 3.7% agreement (1 models)  
Supporting Models: Unknown
- **Reactive Arthritis** (ICD-10: M02.9) - 3.7% agreement (1 models)  
Supporting Models: Unknown
- **Ankylosing Spondylitis** (ICD-10: Unknown) - 3.7% agreement (1 models)  
Supporting Models: Unknown

- **Crohn's Disease** (ICD-10: K50.9) - 3.7% agreement (1 models)

Supporting Models: Unknown

- **Uveitis** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: Unknown

- **Behcet's Disease** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: Unknown

- **Takayasu's Arteritis** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: Unknown

- **Wegener's Granulomatosis** (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 colchicine therapy	Clinical indication	50%
2	Order genetic testing for MEFV gene mutations	Clinical indication	50%

## Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
Complete blood count (CBC)	Diagnostic confirmation	Routine	As indicated
C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR)	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
llama-3.2-3b-in	USA	Free	Free	Juvenile Idiopathic Arthritis	General
mistral-7b-inst	France	Free	Free	Familial Mediterranean Fever	General
gpt-oss-20b	USA	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) - 0.65
- 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 (1-3 days)
- Severe abdominal pain during attacks
- Chest pain with pleurisy

### 2. llama-3.2-3b-in (USA, Released: 2024-09-25)

**Primary Diagnosis:** Juvenile Idiopathic Arthritis (ICD-10: M05.2) - Confidence: 0.8

**Differential Diagnoses:**

- Reactive Arthritis (ICD: M45.1) - 0.6
- Ankylosing Spondylitis (ICD: M91.2) - 0.5
- Crohn's Disease (ICD: K50.2) - 0.4

**Key Clinical Findings:**

- Fever lasting 1-3 days
- Severe abdominal pain during episodes
- Chest pain with breathing difficulties
- Joint pain affecting knees and ankles

### 3. mistral-7b-inst (France, Released: 2023-09-27)

### 4. gpt-oss-20b (USA, Released: 2024-05-13)