MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: tmp7opgg0my Title: Custom Case Analysis Generated: 2025-09-05 07:03

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever *Evidence: Recurrent febrile episodes, Mediterranean ethnicity, Abdominal pain, Arthritis*	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 syndrome characteristics*	E85.8	7.4%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis *Evidence: Fever episodes, Joint involvement, Systemic inflammation*	M08.2	7.4%	Minority (<10%)
Adult-Onset Still's Disease *Evidence: High spiking fevers, Arthralgia/arthritis, Systemic symptoms*	M06.1	3.7%	Minority (<10%)
Behçet's Disease *Evidence: Oral/genital ulcers, Uveitis, Skin lesions*	M35.2	0.0%	Minority (<10%)
Cyclic Neutropenia *Evidence: Periodic fever, Neutropenia, Oral ulcers*	D70	0.0%	Minority (<10%)
PFAPA Syndrome *Evidence: Periodic fever, Aphthous stomatitis, Pharyngitis*	E85.8	0.0%	Minority (<10%)
Hereditary Periodic Fever *Evidence: Genetic predisposition, Recurrent inflammatory episodes*	E85.0	0.0%	Minority (<10%)
Inflammatory Bowel Disease *Evidence: Abdominal pain, Fever, Gastrointestinal symptoms*	K50-K51	0.0%	Minority (<10%)

Diagnosis	ICD-10	Support	Type
Lyme Disease *Evidence: Fever, Arthritis, Tick exposure history*	A69.20	0.0%	Minority (<10%)
Rheumatic Fever *Evidence: Fever, Arthritis, Preceding streptococcal infection*	I00-I02	0.0%	Minority (<10%)
Sarcoidosis *Evidence: Fever, Arthritis, Multi-system involvement*	D86	0.0%	Minority (<10%)
Systemic Lupus Erythematosus *Evidence: Fever, Arthritis, Autoimmune features*	M32	0.0%	Minority (<10%)

Analysis Overview

Models Queried: 3

Successful Responses: 3

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	Systemic	Adult-On	PFAPA Sy	Behçet's
Recurrent fever	Strong	Strong	Strong	-	-
Abdominal pain	Strong	-	-	-	-
Arthritis	Medium	Strong	Strong	-	-
Ethnic predispo	Strong	-	-	-	-
Systemic inflam	-	Strong	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

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

Primary Recommendations

• Consider Familial Mediterranean Fever among differential diagnoses
• Initiate colchicine therapy
• Provide patient education about FMF and treatment
• Assess for signs of acute attack requiring NSAIDs
• Obtain Genetic testing for MEFV mutations for diagnostic confirmation

Primary Diagnosis Clinical Summaries

■ Key Clinical Findings

Finding	Supporting Evidence	Clinical Reasoning
Recurrent febrile episodes	Clinical presentation	Key diagnostic indicator
Abdominal pain	Clinical presentation	Key diagnostic indicator
Mediterranean ethnicity	Clinical presentation	Key diagnostic indicator
Arthritis/arthralgia	Clinical presentation	Key diagnostic indicator
Systemic inflammation markers	Clinical presentation	Key diagnostic indicator

■ Recommended Tests

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

■ Medications

Medication	Dosage	Route/Frequency	Indication
Colchicine	0.5-2.0 mg/day	Oral / Daily	Prophylaxis against FMF attacks and amyloidosis
NSAIDs (e.g., Ibuprofen)	As needed for acute pain	Oral / During attacks	Symptomatic treatment of acute 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: Recurrent fever pattern, Autoinflammatory syndrome characteristics*	7.4%	2 models	Unlikely
Systemic Juvenile Idiopathic Arthritis *Evidence: Fever episodes, Joint involvement, Systemic inflammation*	7.4%	2 models	Unlikely
Adult-Onset Still's Disease *Evidence: High spiking fevers, Arthralgia/arthritis, Systemic symptoms*	3.7%	1 models	Unlikely
Behçet's Disease *Evidence: Oral/genital ulcers, Uveitis, Skin lesions*	0.0%	0 models	Unlikely
Cyclic Neutropenia *Evidence: Periodic fever, Neutropenia, Oral ulcers*	0.0%	0 models	Unlikely
PFAPA Syndrome *Evidence: Periodic fever, Aphthous stomatitis, Pharyngitis*	0.0%	0 models	Unlikely
Hereditary Periodic Fever *Evidence: Genetic predisposition, Recurrent inflammatory episodes*	0.0%	0 models	Unlikely
Inflammatory Bowel Disease *Evidence: Abdominal pain, Fever, Gastrointestinal symptoms*	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) - 7.4% agreement (2 models)
  Supporting Models: Model1, Model3
- **Systemic Juvenile Idiopathic Arthritis** (ICD-10: Unknown) - 7.4% agreement (2 models)
  Supporting Models: Model1, Model3
- **Adult-Onset Still's Disease** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: Model3

- **Behçet's Disease** (ICD-10: Unknown) - 0.0% agreement (0 models)
  Supporting Models:
- **Cyclic Neutropenia** (ICD-10: Unknown) - 0.0% agreement (0 models)
  Supporting Models:
- **PFAPA Syndrome** (ICD-10: D89.1) - 0.0% agreement (0 models)
  Supporting Models:
- **Hereditary Periodic Fever** (ICD-10: R50.9) - 0.0% agreement (0 models)
  Supporting Models:
- **Inflammatory Bowel Disease** (ICD-10: K50.9) - 0.0% agreement (0 models)
  Supporting Models:
- **Lyme Disease** (ICD-10: Unknown) - 0.0% agreement (0 models)
  Supporting Models:
- **Rheumatic Fever** (ICD-10: Unknown) - 0.0% agreement (0 models)
  Supporting Models:
- **Sarcoidosis** (ICD-10: Unknown) - 0.0% agreement (0 models)
  Supporting Models:
- **Systemic Lupus Erythematosus** (ICD-10: M32.9) - 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 treatment	Clinical indication	50%
3	Assess for signs of acute attack requiring NSAIDs	Clinical indication	50%

Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
Genetic testing for MEFV mutations	Diagnostic confirmation	Routine	As indicated
Serum amyloid A (SAA) and C-reactive protein (CRP) levels	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	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
gemma-3-12b-it	USA	Unknown	<$0.01	Periodic Fever Syndrome (likely Familial Mediterranean Fever - FMF)	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) - 0.6
- 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 fever episodes
- Abdominal pain
- Chest pain with breathing difficulties

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

3. gemma-3-12b-it (USA, Released: 2024-12-11)

Primary Diagnosis: Periodic Fever Syndrome (likely Familial Mediterranean Fever - FMF) (ICD-10: M69.8) - Confidence: 0.85

Differential Diagnoses:

- Systemic Juvenile Idiopathic Arthritis (SJIA) (ICD: M08.0) - 0.6
- Adult-Onset Still's Disease (AOSD) (ICD: M05.8) - 0.5
- Inflammatory Bowel Disease (IBD) - Crohn's Disease or Ulcerative Colitis (ICD: K50.-) - 0.4

Key Clinical Findings:

- Recurrent fever episodes (1-3 days)
- Severe abdominal pain during episodes
- Chest pain and breathing difficulties
- Joint pain (knees and ankles)