MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: tmpe91lta90 Title: Custom Case Analysis Generated: 2025-09-08 16:22

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever *Evidence: Recurrent febrile episodes, Mediterranean ethnicity, Abdominal pain, 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*	E85.8	3.7%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis *Evidence: Systemic inflammation, Fever episodes*	M08.2	3.7%	Minority (<10%)
Adult-Onset Still's Disease *Evidence: High spiking fevers, Systemic symptoms*	M35.3	3.7%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis (sJIA) *Evidence: Childhood onset, Systemic features*	M08.0	3.7%	Minority (<10%)
Behçet's Disease *Evidence: Oral ulcers, Recurrent inflammation*	M35.2	0.0%	Minority (<10%)
Cyclic Neutropenia *Evidence: Periodic fever, Neutrophil cycling*	D70	0.0%	Minority (<10%)
PFAPA Syndrome *Evidence: Periodic fever, Aphthous stomatitis, Pharyngitis*	E85.8	0.0%	Minority (<10%)
Tumor Necrosis Factor Receptor-Associated Periodic Syndrome (TRAPS) *Evidence: Prolonged fever episodes, Autosomal dominant inheritance*	E85.1	0.0%	Minority (<10%)

Diagnosis	ICD-10	Support	Type
Hyperimmunoglobulin D Syndrome (HIDS) *Evidence: Recurrent fever, Elevated IgD, Lymphadenopathy*	E85.8	0.0%	Minority (<10%)
Inflammatory Bowel Disease *Evidence: Abdominal pain, Systemic inflammation*	K50-K52	0.0%	Minority (<10%)

Analysis Overview

Models Queried: 2

Successful Responses: 2

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	Adult-On	TRAPS	PFAPA Sy	Systemic
Recurrent fever	Strong	Medium	Strong	-	-
Abdominal pain	Strong	-	-	-	-
Ethnic predispo	Strong	-	-	-	-
Short attack du	Medium	-	-	-	-
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
• Positive family history of similar episodes
• Migratory arthritis affecting large joints
• Severe abdominal pain with peritoneal signs
• Elevated inflammatory markers (CRP, ESR)

Primary Recommendations

• Consider Familial Mediterranean Fever among differential diagnoses
• 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
Mediterranean ethnicity	Clinical presentation	Key diagnostic indicator
Abdominal pain	Clinical presentation	Key diagnostic indicator
Short duration attacks	Clinical presentation	Key diagnostic indicator
Systemic inflammation	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	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 on FMF management	Medical	Immediate	Critical intervention
Assess for acute complications requiring symptomatic treatment	Medical	Immediate	Critical intervention

■ Medications

Medication	Dosage	Route/Frequency	Indication
Colchicine	0.5-2.4 mg daily	Oral / Once or twice daily	Prophylaxis against FMF attacks and prevention of amyloidosis

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) *Evidence: Recurrent fever pattern, Autoinflammatory nature*	3.7%	1 models	Unlikely
Systemic Juvenile Idiopathic Arthritis *Evidence: Systemic inflammation, Fever episodes*	3.7%	1 models	Unlikely
Adult-Onset Still's Disease *Evidence: High spiking fevers, Systemic symptoms*	3.7%	1 models	Unlikely
Systemic Juvenile Idiopathic Arthritis (sJIA) *Evidence: Childhood onset, Systemic features*	3.7%	1 models	Unlikely
Behçet's Disease *Evidence: Oral ulcers, Recurrent inflammation*	0.0%	0 models	Unlikely
Cyclic Neutropenia *Evidence: Periodic fever, Neutrophil cycling*	0.0%	0 models	Unlikely
PFAPA Syndrome *Evidence: Periodic fever, Aphthous stomatitis, Pharyngitis*	0.0%	0 models	Unlikely
Tumor Necrosis Factor Receptor-Associated Periodic Syndrome (TRAPS) *Evidence: Prolonged fever episodes, Autosomal dominant inheritance*	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

- **Adult-Onset Still's Disease** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: model2
- **Systemic Juvenile Idiopathic Arthritis (sJIA)** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: model2
- **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:
- **Tumor Necrosis Factor Receptor-Associated Periodic Syndrome (TRAPS)** (ICD-10: Unknown) - 0.0% agreement (0 models)
  Supporting Models:
- **Hyperimmunoglobulin D Syndrome (HIDS)** (ICD-10: Unknown) - 0.0% agreement (0 models)
  Supporting Models:
- **Inflammatory Bowel Disease** (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 on FMF management	Clinical indication	50%
3	Assess for acute complications requiring symptomatic treatment	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	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-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) - 0.7
- 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 (1-3 days)
- Periodic abdominal pain
- Pleuritic chest pain

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

Primary Diagnosis: Periodic Fever Syndrome (likely Familial Mediterranean Fever - FMF) (ICD-10: M15.4) - Confidence: 0.85

Differential Diagnoses:

- Adult-Onset Still's Disease (ICD: M35.3) - 0.6
- Systemic Juvenile Idiopathic Arthritis (sJIA) (ICD: M08.0) - 0.5
- Vasculitis (e.g., Polyarteritis Nodosa) (ICD: M34.0) - 0.4

Key Clinical Findings:

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