

MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID:
custom_20250909_003127 Title: Custom Case

Generated: 2025-09-09
00:34

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever <i>Evidence: Recurrent febrile episodes, Mediterranean ethnicity, Autosomal recessive inheritance pattern, Response to colchicine</i>	E85.0	0.0%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Periodic Fever, Aphthous Stomatitis, Pharyngitis, Adenitis (PFAPA) Syndrome <i>Evidence: Regular fever episodes, Aphthous stomatitis, Pharyngitis</i>	R50.81	7.4%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis <i>Evidence: Recurrent fevers, Arthritis, Rash</i>	M08.2	3.7%	Minority (<10%)
Hyper-IgD Syndrome (Mevalonate Kinase Deficiency) <i>Evidence: Recurrent febrile attacks, Elevated IgD levels, Abdominal pain</i>	E85.1	3.7%	Minority (<10%)
TNF Receptor-Associated Periodic Syndrome <i>Evidence: Recurrent fevers, Rash, Abdominal pain</i>	E85.0	3.7%	Minority (<10%)
Cyclic Neutropenia <i>Evidence: Regular fever cycles, Oral ulcers, Periodontal disease</i>	D70	3.7%	Minority (<10%)
Behçet's Disease <i>Evidence: Oral ulcers, Genital ulcers, Uveitis</i>	M35.2	3.7%	Minority (<10%)
Adult-Onset Still's Disease <i>Evidence: High spiking fevers, Salmon-colored rash, Arthralgia</i>	M06.1	3.7%	Minority (<10%)
Inflammatory Bowel Disease <i>Evidence: Abdominal pain, Fever, Diarrhea</i>	K50-K51	3.7%	Minority (<10%)

Diagnosis	ICD-10	Support	Type
Lymphoma <i>Evidence: Fever, Night sweats, Weight loss</i>	C85	3.7%	Minority (<10%)
Infection-Related Periodic Fever <i>Evidence: Recurrent infections, Fever patterns, Response to antibiotics</i>	R50.9	3.7%	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	PFAPA Sy	Systemic	Hyper-Ig	TRAPS	Behçet's	Adult-On
Recurrent fever	Strong	-	-	-	-	-	-
Abdominal pain	Strong	-	-	-	-	-	-
Rash	-	-	Medium	-	-	-	-
Arthritis	-	-	Strong	-	-	-	-
Oral ulcers	-	Strong	-	-	-	-	-
Pharyngitis	-	Strong	-	-	-	-	-
Lymphadenopathy	-	-	-	Medium	-	-	-

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
- Elevated inflammatory markers (CRP, ESR)
- Positive family history of similar episodes
- Severe abdominal pain with peritoneal signs
- 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 febrile episodes	Clinical presentation	Key diagnostic indicator
Mediterranean ethnicity	Clinical presentation	Key diagnostic indicator
Autosomal recessive inheritance	Clinical presentation	Key diagnostic indicator
Response to colchicine	Clinical presentation	Key diagnostic indicator
Elevated inflammatory markers	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) protein levels	Laboratory	Urgent	Diagnostic confirmation
C-reactive protein (CRP)	Laboratory	Urgent	Diagnostic confirmation
Erythrocyte sedimentation rate (ESR)	Laboratory	Urgent	Diagnostic confirmation
Complete blood count (CBC)	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 renal amyloidosis	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

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, Aphthous Stomatitis, Pharyngitis, Adenitis (PFAPA) Syndrome <i>Evidence: Regular fever episodes, Aphthous stomatitis, Pharyngitis</i>	7.4%	2 models	Unlikely
Systemic Juvenile Idiopathic Arthritis <i>Evidence: Recurrent fevers, Arthritis, Rash</i>	3.7%	1 models	Unlikely
Hyper-IgD Syndrome (Mevalonate Kinase Deficiency) <i>Evidence: Recurrent febrile attacks, Elevated IgD levels, Abdominal pain</i>	3.7%	1 models	Unlikely
TNF Receptor-Associated Periodic Syndrome <i>Evidence: Recurrent fevers, Rash, Abdominal pain</i>	3.7%	1 models	Unlikely
Cyclic Neutropenia <i>Evidence: Regular fever cycles, Oral ulcers, Periodontal disease</i>	3.7%	1 models	Unlikely
Behçet's Disease <i>Evidence: Oral ulcers, Genital ulcers, Uveitis</i>	3.7%	1 models	Unlikely
Adult-Onset Still's Disease <i>Evidence: High spiking fevers, Salmon-colored rash, Arthralgia</i>	3.7%	1 models	Unlikely
Inflammatory Bowel Disease <i>Evidence: Abdominal pain, Fever, Diarrhea</i>	3.7%	1 models	Unlikely

Minority Opinions

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

- **Periodic Fever, Aphthous Stomatitis, Pharyngitis, Adenitis (PFAPA) Syndrome** (ICD-10: R50.9) - 7.4% agreement (2 models)

Supporting Models: Unknown, Unknown

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

Supporting Models: Unknown

- **Hyper-IgD Syndrome (Mevalonate Kinase Deficiency)** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: Unknown

- **TNF Receptor-Associated Periodic Syndrome** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: Unknown

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

Supporting Models: Unknown

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

Supporting Models: Unknown

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

Supporting Models: Unknown

- **Inflammatory Bowel Disease** (ICD-10: K50.9) - 3.7% agreement (1 models)

Supporting Models: Unknown

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

Supporting Models: Unknown

- **Infection-Related Periodic Fever** (ICD-10: R50.9) - 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	Provide patient education about FMF and treatment	Clinical indication	50%
3	Assess for signs of renal amyloidosis	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) protein levels	Diagnostic confirmation	Routine	As indicated
C-reactive protein (CRP)	Diagnostic confirmation	Routine	As indicated
Erythrocyte sedimentation rate (ESR)	Diagnostic confirmation	Routine	As indicated
Complete blood count (CBC)	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
shisa-v2-llama3	Japan/USA	Free	Free	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, Aphthous Stomatitis, Pharyngitis, Adenitis (PFAPA) Syndrome (ICD: R50.81) - 0.3
- Systemic Juvenile Idiopathic Arthritis (ICD: M08.2) - 0.25
- Hereditary Periodic Fever Syndrome (other than FMF) (ICD: E85.8) - 0.2

Key Clinical Findings:

- Mediterranean descent
- Recurrent self-limited febrile episodes (1-3 days)
- Severe abdominal pain
- Pleuritic chest pain

2. shisa-v2-llama3 (Japan/USA, Released: 2024-12-20)

Primary Diagnosis: Familial Mediterranean Fever (FMF) (ICD-10: E85.0) - Confidence: 0.9

Differential Diagnoses:

- Periodic Fever, Aphthous Stomatitis, Pharyngitis, Cervical Adenitis (PFAPA) Syndrome (ICD: I88.1) - 0.3
- Hyper-IgD Syndrome (Mevalonate Kinase Deficiency) (ICD: E85.1) - 0.2
- TNF Receptor-Associated Periodic Syndrome (TRAPS) (ICD: E85.2) - 0.2

Key Clinical Findings:

- Recurrent febrile episodes with abdominal and chest pain
- Joint involvement (knees and ankles)
- Family history of similar symptoms (father and paternal uncle)
- Elevated CRP, ESR, and WBC during episodes