MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID:
custom_20250909_071357   Title: Custom Case

Generated: 2025-09-09
07:15

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever *Evidence: Recurrent fevers with family history, Elevated CRP, ESR, and WBC during attacks*	E85.0	0.0%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Periodic Fever Syndrome (other types) *Evidence: Recurrent fevers with family history*	E85.8	3.7%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis *Evidence: Recurrent fevers, joint pain, elevated inflammatory markers*	M08.2	3.7%	Minority (<10%)
Tumor Necrosis Factor Receptor-Associated Periodic Syndrome (TRAPS) *Evidence: Recurrent fevers, abdominal pain, elevated inflammatory markers*	E85.8	3.7%	Minority (<10%)
Hyperimmunoglobulinemia D Syndrome (HIDS) *Evidence: Recurrent fevers, abdominal pain, elevated inflammatory markers*	E85.8	3.7%	Minority (<10%)
Mevalonate Kinase Deficiency (MKD) *Evidence: Recurrent fevers, abdominal pain, elevated inflammatory markers*	E85.8	3.7%	Minority (<10%)
Cryopyrin-Associated Periodic Syndromes (CAPS) *Evidence: Recurrent fevers, joint pain, elevated inflammatory markers*	E85.8	3.7%	Minority (<10%)
Adult-Onset Still's Disease *Evidence: Recurrent fevers, joint pain, elevated inflammatory markers*	M06.1	3.7%	Minority (<10%)
Behçet's Disease *Evidence: Recurrent fevers, oral and genital ulcers, uveitis*	M35.2	3.7%	Minority (<10%)

Diagnosis	ICD-10	Support	Type
Systemic Lupus Erythematosus (SLE) *Evidence: Recurrent fevers, joint pain, multi-organ involvement*	M32.9	3.7%	Minority (<10%)
Infectious Mononucleosis *Evidence: Recurrent fevers, lymphadenopathy, sore throat*	B27.0	3.7%	Minority (<10%)
Recurrent Pericarditis *Evidence: Recurrent chest pain, pericardial friction rub*	I30.8	3.7%	Minority (<10%)

Analysis Overview
Models Queried: 2
Successful Responses: 2
Consensus Level: High
Total 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	Periodic	Systemic	Tumor Ne	Hyperimm	Mevalona	Cryopyri	Adult-On
Recurrent fever	Strong	Strong	Strong	-	-	-	-	-
Abdominal pain	Strong	Strong	-	-	-	-	-	-
Chest pain	Strong	Strong	-	-	-	-	-	-
Joint pain	Strong	Strong	Strong	-	-	-	-	-
Elevated inflam	Strong	Strong	Strong	-	-	-	-	-
Family history	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

• Positive family history of similar episodes

• Severe abdominal pain with peritoneal signs

• Recurrent fever episodes

• Elevated inflammatory markers (CRP, ESR)

• Migratory arthritis affecting large joints

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 fevers with family history	Clinical presentation	Key diagnostic indicator
Elevated CRP, ESR, and WBC during attacks	Clinical presentation	Key diagnostic indicator
Abdominal and chest pain	Clinical presentation	Key diagnostic indicator
Joint pain	Clinical presentation	Key diagnostic indicator
Symptoms start in childhood and occur every 2-3 weeks	Clinical presentation	Key diagnostic indicator

■ Recommended Tests

Test Name	Type	Priority	Rationale
Genetic testing for MEFV mutations	Laboratory	Urgent	Diagnostic confirmation
Complete blood count (CBC) with differential	Laboratory	Urgent	Diagnostic confirmation

■ Immediate Management

Intervention	Category	Urgency	Clinical Reasoning
Obtain a detailed family history	Medical	Immediate	Critical intervention
Initiate colchicine therapy	Medical	Immediate	Critical intervention

■ Medications

Medication	Dosage	Route/Frequency	Indication
Colchicine	0.6 mg	oral / twice 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 1 models.

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Periodic Fever Syndrome (other types) *Evidence: Recurrent fevers with family history*	3.7%	1 models	Unlikely
Systemic Juvenile Idiopathic Arthritis *Evidence: Recurrent fevers, joint pain, elevated inflammatory markers*	3.7%	1 models	Unlikely
Tumor Necrosis Factor Receptor-Associated Periodic Syndrome (TRAPS) *Evidence: Recurrent fevers, abdominal pain, elevated inflammatory markers*	3.7%	1 models	Unlikely
Hyperimmunoglobulinemia D Syndrome (HIDS) *Evidence: Recurrent fevers, abdominal pain, elevated inflammatory markers*	3.7%	1 models	Unlikely
Mevalonate Kinase Deficiency (MKD) *Evidence: Recurrent fevers, abdominal pain, elevated inflammatory markers*	3.7%	1 models	Unlikely
Cryopyrin-Associated Periodic Syndromes (CAPS) *Evidence: Recurrent fevers, joint pain, elevated inflammatory markers*	3.7%	1 models	Unlikely
Adult-Onset Still's Disease *Evidence: Recurrent fevers, joint pain, elevated inflammatory markers*	3.7%	1 models	Unlikely
Behçet's Disease *Evidence: Recurrent fevers, oral and genital ulcers, uveitis*	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: model1

• **Systemic Juvenile Idiopathic Arthritis** (ICD-10: Unknown) - 3.7% agreement (1 models)
   Supporting Models: model1

• **Tumor Necrosis Factor Receptor-Associated Periodic Syndrome (TRAPS)** (ICD-10: Unknown) - 3.7% agreement (1 models)

> Supporting Models: model2

• **Hyperimmunoglobulinemia D Syndrome (HIDS)** (ICD-10: Unknown) - 3.7% agreement (1 models)

> Supporting Models: model2

• **Mevalonate Kinase Deficiency (MKD)** (ICD-10: Unknown) - 3.7% agreement (1 models)

> Supporting Models: model2

• **Cryopyrin-Associated Periodic Syndromes (CAPS)** (ICD-10: Unknown) - 3.7% agreement (1 models)

> Supporting Models: model2

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

> Supporting Models: model2

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

> Supporting Models: model2

• **Systemic Lupus Erythematosus (SLE)** (ICD-10: M32.9) - 3.7% agreement (1 models)

> Supporting Models: model2

• **Infectious Mononucleosis** (ICD-10: Unknown) - 3.7% agreement (1 models)

> Supporting Models: model2

• **Recurrent Pericarditis** (ICD-10: Unknown) - 3.7% agreement (1 models)

> Supporting Models: model2

Additional Diagnoses Considered:

Management Strategies & Clinical Pathways

Immediate Actions Required

Priority	Action	Rationale	Consensus
1	Obtain a detailed family history	Clinical indication	50%
2	Initiate colchicine therapy	Clinical indication	50%

Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
Genetic testing for MEFV mutations	Diagnostic confirmation	Routine	As indicated
Complete blood count (CBC) with differential	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
deepseek-r1	China	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) - 0.7
- Systemic Juvenile Idiopathic Arthritis (ICD: M08.2) - 0.4
- Acute Intermittent Porphyria (ICD: E80.21) - 0.3

Key Clinical Findings:

- Recurrent febrile episodes (1-3 days)
- Severe abdominal pain
- Chest pain with breathing difficulties
- Joint pain (knees/ankles)

2. deepseek-r1 (China, Released: 2025-01-20)