MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: custom_20250909_120141	Title: A 28-year-old male of Mediterranean descent presents with: -...	Generated: 2025-09-09 12:03

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever *Evidence: Recurrent fever episodes, Abdominal pain, Chest pain, Joint pain*	E85.0	0.0%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Periodic Fever, Aphthous Stomatitis, Pharyngitis, Adenitis Syndrome (PFAPA) *Evidence: Recurrent fever episodes, Symptoms started in childhood*	R50.81	3.7%	Minority (<10%)
Tumor Necrosis Factor Receptor-Associated Periodic Syndrome (TRAPS) *Evidence: Recurrent fever episodes, Abdominal pain, Joint pain*	M31.81	3.7%	Minority (<10%)
Hyperimmunoglobulin D Syndrome (HIDS) *Evidence: Recurrent fever episodes, Abdominal pain, Joint pain*	E85.81	0.0%	Minority (<10%)
Mevalonate Kinase Deficiency (MKD) *Evidence: Recurrent fever episodes, Abdominal pain, Joint pain*	E71.01	0.0%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis (SJIA) *Evidence: Recurrent fever episodes, Joint pain, Elevated CRP, ESR, and WBC*	M08.1	0.0%	Minority (<10%)
Adult-Onset Still's Disease (AOSD) *Evidence: Recurrent fever episodes, Joint pain, Elevated CRP, ESR, and WBC*	M06.1	0.0%	Minority (<10%)
Behçet's Disease *Evidence: Recurrent fever episodes, Abdominal pain, Joint pain*	M35.2	0.0%	Minority (<10%)
Hereditary Periodic Fever Syndromes *Evidence: Recurrent fever episodes, Abdominal pain, Joint pain*	E85.81	0.0%	Minority (<10%)

Diagnosis	ICD-10	Support	Type
Familial Cold Autoinflammatory Syndrome (FCAS) *Evidence: Recurrent fever episodes, Joint pain*	M31.81	0.0%	Minority (<10%)
Muckle-Wells Syndrome (MWS) *Evidence: Recurrent fever episodes, Joint pain*	M31.81	0.0%	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	Tumor Ne	Hyperimm	Mevalona	Systemic	Adult-On	Behçet's
Recurrent fever	Strong	Moderate	Moderate	-	-	-	-	-
Abdominal pain	Strong	-	Moderate	-	-	-	-	-
Chest pain	Strong	-	-	-	-	-	-	-
Joint pain	Strong	-	Moderate	-	-	-	-	-
Elevated CRP, E	Strong	-	-	-	-	-	-	-
Family history	Strong	-	-	-	-	-	-	-
Mediterranean d	Strong	-	-	-	-	-	-	-
Symptoms starte	Strong	Moderate	-	-	-	-	-	-
Asymptomatic be	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

• Recurrent fever episodes
• Elevated inflammatory markers (CRP, ESR)
• Severe abdominal pain with peritoneal signs
• Positive family history of similar episodes
• 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 fever episodes	Clinical presentation	Key diagnostic indicator
Abdominal pain	Clinical presentation	Key diagnostic indicator
Chest pain	Clinical presentation	Key diagnostic indicator
Joint pain	Clinical presentation	Key diagnostic indicator
Family history in father and uncle	Clinical presentation	Key diagnostic indicator

■ Recommended Tests

Test Name	Type	Priority	Rationale
Genetic testing for MEFV gene mutations	Laboratory	Urgent	Diagnostic confirmation
Complete blood count (CBC)	Laboratory	Urgent	Diagnostic confirmation
C-reactive protein (CRP)	Laboratory	Urgent	Diagnostic confirmation
Erythrocyte sedimentation rate (ESR)	Laboratory	Urgent	Diagnostic confirmation

■ Immediate Management

Intervention	Category	Urgency	Clinical Reasoning
Initiate colchicine therapy	Medical	Immediate	Critical intervention
Schedule genetic testing for MEFV gene mutations	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 4 models.

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Periodic Fever, Aphthous Stomatitis, Pharyngitis, Adenitis Syndrome (PFAPA) *Evidence: Recurrent fever episodes, Symptoms started in childhood*	3.7%	1 models	Unlikely
Tumor Necrosis Factor Receptor-Associated Periodic Syndrome (TRAPS) *Evidence: Recurrent fever episodes, Abdominal pain, Joint pain*	3.7%	1 models	Unlikely
Hyperimmunoglobulin D Syndrome (HIDS) *Evidence: Recurrent fever episodes, Abdominal pain, Joint pain*	0.0%	0 models	Unlikely
Mevalonate Kinase Deficiency (MKD) *Evidence: Recurrent fever episodes, Abdominal pain, Joint pain*	0.0%	0 models	Unlikely
Systemic Juvenile Idiopathic Arthritis (SJIA) *Evidence: Recurrent fever episodes, Joint pain, Elevated CRP, ESR, and WBC*	0.0%	0 models	Unlikely
Adult-Onset Still's Disease (AOSD) *Evidence: Recurrent fever episodes, Joint pain, Elevated CRP, ESR, and WBC*	0.0%	0 models	Unlikely
Behçet's Disease *Evidence: Recurrent fever episodes, Abdominal pain, Joint pain*	0.0%	0 models	Unlikely
Hereditary Periodic Fever Syndromes *Evidence: Recurrent fever episodes, Abdominal pain, Joint pain*	0.0%	0 models	Unlikely

Minority Opinions

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

• **Periodic Fever, Aphthous Stomatitis, Pharyngitis, Adenitis Syndrome (PFAPA)** (ICD-10: R50.9) - 3.7% agreement (1 models)

Supporting Models: Unknown

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

Supporting Models: Unknown

• **Hyperimmunoglobulin D Syndrome (HIDS)** (ICD-10: Unknown) - 0.0% agreement (0 models)

Supporting Models:

• **Mevalonate Kinase Deficiency (MKD)** (ICD-10: Unknown) - 0.0% agreement (0 models)

Supporting Models:

• **Systemic Juvenile Idiopathic Arthritis (SJIA)** (ICD-10: Unknown) - 0.0% agreement (0 models)

Supporting Models:

• **Adult-Onset Still's Disease (AOSD)** (ICD-10: Unknown) - 0.0% agreement (0 models)

Supporting Models:

• **Behçet's Disease** (ICD-10: Unknown) - 0.0% agreement (0 models)

Supporting Models:

• **Hereditary Periodic Fever Syndromes** (ICD-10: R50.9) - 0.0% agreement (0 models)

Supporting Models:

• **Familial Cold Autoinflammatory Syndrome (FCAS)** (ICD-10: Unknown) - 0.0% agreement (0 models)

Supporting Models:

• **Muckle-Wells Syndrome (MWS)** (ICD-10: Unknown) - 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	Schedule genetic testing for MEFV gene mutations	Clinical indication	50%

Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
Genetic testing for MEFV gene mutations	Diagnostic confirmation	Routine	As indicated
Complete blood count (CBC)	Diagnostic confirmation	Routine	As indicated
C-reactive protein (CRP)	Diagnostic confirmation	Routine	As indicated
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
deepseek-r1	China	Unknown	<$0.01	Familial Mediterranean Fever	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, Aphthous Stomatitis, Pharyngitis, Adenitis Syndrome (PFAPA) (ICD: R50.81) - 0.3
- Tumor Necrosis Factor Receptor-Associated Periodic Syndrome (TRAPS) (ICD: E85.0) - 0.25
- Systemic-Onset Juvenile Idiopathic Arthritis (ICD: M08.2) - 0.2

Key Clinical Findings:

- Mediterranean descent
- Recurrent self-limited fever episodes
- Severe abdominal pain
- Chest pain with pleurisy

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

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

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