MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: custom_20250909_072932 Title: Custom Case Generated: 2025-09-09 07:32

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever (FMF) *Evidence: Recurrent fever episodes, Severe abdominal pain, Chest pain with breathing difficulties, Joint pain in knees and ankles*	E85.0	0.0%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Periodic Fever Syndrome (other types) *Evidence: Recurrent fever episodes, Severe abdominal pain, Chest pain with breathing difficulties*	E85.8	7.4%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis *Evidence: Recurrent fever episodes, Joint pain in knees and ankles*	M08.2	7.4%	Minority (<10%)
Adult-Onset Still's Disease *Evidence: Recurrent fever episodes, Joint pain in knees and ankles*	M35.3	3.7%	Minority (<10%)
Vasculitis (e.g., Polyarteritis Nodosa) *Evidence: Recurrent fever episodes, Severe abdominal pain, Chest pain with breathing difficulties*	M30.0	3.7%	Minority (<10%)
Behcet's disease *Evidence: Recurrent fever episodes, Severe abdominal pain, Chest pain with breathing difficulties*	L98.8	3.7%	Minority (<10%)
Reactive arthritis *Evidence: Recurrent fever episodes, Joint pain in knees and ankles*	M45.8	3.7%	Minority (<10%)
Sarcoidosis *Evidence: Recurrent fever episodes, Severe abdominal pain*	M35.8	3.7%	Minority (<10%)

Diagnosis	ICD-10	Support	Type
Systemic lupus erythematosus *Evidence: Recurrent fever episodes, Severe abdominal pain, Chest pain with breathing difficulties*	M32.0	3.7%	Minority (<10%)
Crohn's disease *Evidence: Recurrent fever episodes, Severe abdominal pain*	K50.9	3.7%	Minority (<10%)
Periodic Fever, Aphthous Stomatitis, Pharyngitis, Adenitis (PFAPA) Syndrome *Evidence: Recurrent fever episodes, Severe abdominal pain*	K00.6	3.7%	Minority (<10%)
Hyper-IgD Syndrome (Mevalonate Kinase Deficiency) *Evidence: Recurrent fever episodes, Severe abdominal pain*	E85.1	3.7%	Minority (<10%)

Analysis Overview

Models Queried: 7

Successful Responses: 7

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	Familial	Periodic	Systemic	Adult-On	Vasculit	Behcet's	Reactive	Sarcoido
Recurrent fever	Strong	Strong	Strong	Strong	Strong	Strong	Strong	Strong
Severe abdomina	Strong	Strong	-	-	Strong	Strong	-	Strong
Chest pain with	Strong	Strong	-	-	Strong	Strong	-	-
Joint pain in k	Strong	Strong	Strong	Strong	-	-	Strong	-
Family history	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

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

Primary Recommendations

• Consider Familial Mediterranean Fever (FMF) 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
Severe abdominal pain	Clinical presentation	Key diagnostic indicator
Chest pain with breathing difficulties	Clinical presentation	Key diagnostic indicator
Joint pain in knees and ankles	Clinical presentation	Key diagnostic indicator
Family history of similar symptoms	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) with differential	Laboratory	Urgent	Diagnostic confirmation

■ Immediate Management

Intervention	Category	Urgency	Clinical Reasoning
Initiate genetic testing for MEFV gene mutations	Medical	Immediate	Critical intervention
Start colchicine therapy	Medical	Immediate	Critical intervention

■ Medications

Medication	Dosage	Route/Frequency	Indication
Colchicine	1.2 mg	oral / once daily	Prophylaxis of FMF attacks

Diagnostic Landscape Analysis

Detailed Diagnostic Analysis

The ensemble analysis identified **Familial Mediterranean Fever (FMF)** as the primary diagnosis with limited consensus among 3 models.

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Periodic Fever Syndrome (other types) *Evidence: Recurrent fever episodes, Severe abdominal pain, Chest pain with breathing difficulties*	7.4%	2 models	Unlikely
Systemic Juvenile Idiopathic Arthritis *Evidence: Recurrent fever episodes, Joint pain in knees and ankles*	7.4%	2 models	Unlikely
Adult-Onset Still's Disease *Evidence: Recurrent fever episodes, Joint pain in knees and ankles*	3.7%	1 models	Unlikely
Vasculitis (e.g., Polyarteritis Nodosa) *Evidence: Recurrent fever episodes, Severe abdominal pain, Chest pain with breathing difficulties*	3.7%	1 models	Unlikely
Behcet's disease *Evidence: Recurrent fever episodes, Severe abdominal pain, Chest pain with breathing difficulties*	3.7%	1 models	Unlikely
Reactive arthritis *Evidence: Recurrent fever episodes, Joint pain in knees and ankles*	3.7%	1 models	Unlikely
Sarcoidosis *Evidence: Recurrent fever episodes, Severe abdominal pain*	3.7%	1 models	Unlikely
Systemic lupus erythematosus *Evidence: Recurrent fever episodes, Severe abdominal pain, Chest pain with breathing difficulties*	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) - 7.4% agreement (2 models)
  Supporting Models: model1, model4
- **Systemic Juvenile Idiopathic Arthritis** (ICD-10: Unknown) - 7.4% agreement (2 models)
  Supporting Models: model1, model4

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

Supporting Models: model4

• **Vasculitis (e.g., Polyarteritis Nodosa)** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: model4

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

Supporting Models: model5

• **Reactive arthritis** (ICD-10: M02.9) - 3.7% agreement (1 models)

Supporting Models: model5

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

Supporting Models: model5

• **Systemic lupus erythematosus** (ICD-10: M32.9) - 3.7% agreement (1 models)

Supporting Models: model5

• **Crohn's disease** (ICD-10: K50.9) - 3.7% agreement (1 models)

Supporting Models: model5

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

Supporting Models: model7

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

Supporting Models: model7

Additional Diagnoses Considered:

Management Strategies & Clinical Pathways

Immediate Actions Required

Priority	Action	Rationale	Consensus
1	Initiate genetic testing for MEFV gene mutations	Clinical indication	50%
2	Start colchicine therapy	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) 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
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
llama-3.2-3b-in	USA	Free	Free	Behcet's disease	General
mistral-7b-inst	France	Free	Free	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: 0.9

Differential Diagnoses:

- Periodic Fever Syndrome (other types) (ICD: E85.8) - 0.6
- 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
- Abdominal pain
- Chest pain with pleurisy

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

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

4. 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:

- Adult-Onset Still's Disease (ICD: M35.3) - 0.6
- Systemic Juvenile Idiopathic Arthritis (sJIA) (ICD: M08.0) - 0.4
- Vasculitis (e.g., Polyarteritis Nodosa) (ICD: M34.0) - 0.3

Key Clinical Findings:

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

5. llama-3.2-3b-in (USA, Released: 2024-09-25)

Primary Diagnosis: Behcet's disease (ICD-10: K25.0) - Confidence: 0.8

Differential Diagnoses:

- Reactive arthritis (ICD: M45.8) - 0.4
- Sarcoidosis (ICD: M35.8) - 0.3
- Systemic lupus erythematosus (ICD: M32.0) - 0.2

Key Clinical Findings:

- Recurrent episodes of fever and abdominal pain
- Chest pain with breathing difficulties
- Joint pain affecting knees and ankles
- Family history of similar symptoms

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

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

Primary Diagnosis: Familial Mediterranean Fever (FMF) (ICD-10: E85.0) - Confidence: 0.8

Differential Diagnoses:

- Periodic Fever, Aphthous Stomatitis, Pharyngitis, Adenitis (PFAPA) Syndrome (ICD: K00.6) - 0.2
- Hyper-IgD Syndrome (Mevalonate Kinase Deficiency) (ICD: E85.1) - 0.1
- Tumor Necrosis Factor Receptor-Associated Periodic Syndrome (TRAPS) (ICD: E85.2) - 0.1

Key Clinical Findings:

- Recurrent episodes of fever with abdominal, chest, and joint pain
- Family history of similar symptoms (father and paternal uncle)
- Elevated CRP, ESR, and WBC during attacks
- Complete asymptomatic periods between attacks