MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: tmp7eo55k6j	Title: Custom Case Analysis	Generated: 2025-09-05 08:37

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever (FMF) *Evidence: Recurrent fever episodes, Periodic inflammatory symptoms, Genetic predisposition pattern*	E85.0	0.0%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Periodic Fever Syndrome (other types) *Evidence: Episodic fever pattern*	E85.8	3.7%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis *Evidence: Systemic inflammatory features, Arthritis symptoms*	M08.2	7.4%	Minority (<10%)
Autoinflammatory Syndrome Transthyretin-Related (ATTR) *Evidence: Protein misfolding disorder*	D50.8	3.7%	Minority (<10%)
Chronic Recurrent Fever Syndrome *Evidence: Recurrent fever episodes*	R51.9	3.7%	Minority (<10%)
Adult-Onset Still's Disease (AOSD) *Evidence: Adult inflammatory arthritis, Systemic symptoms*	M05.9	3.7%	Minority (<10%)

Analysis Overview
Models Queried: 3
Successful Responses: 3
Consensus Level: High
Total Estimated 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	Systemic	Adult-On
Recurrent fever	Strong	-	-
Periodic episod	Strong	-	-
Inflammatory ma	-	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
• Elevated inflammatory markers (CRP, ESR)
• Migratory arthritis affecting large joints
• Recurrent fever episodes
• Severe abdominal pain with peritoneal signs

Primary Recommendations

• Consider Familial Mediterranean Fever (FMF) among differential diagnoses
• Confirm FMF diagnosis with genetic testing for MEFV gene mutations
• Assess current disease activity and attack frequency
• Evaluate for complications including amyloidosis
• Obtain MEFV gene sequencing for diagnostic confirmation

Primary Diagnosis Clinical Summaries

■ Key Clinical Findings

Finding	Supporting Evidence	Clinical Reasoning
Recurrent fever episodes	Clinical presentation	Key diagnostic indicator
Periodic inflammatory symptoms	Clinical presentation	Key diagnostic indicator
Genetic predisposition	Clinical presentation	Key diagnostic indicator
Systemic inflammatory markers	Clinical presentation	Key diagnostic indicator
Episodic nature of symptoms	Clinical presentation	Key diagnostic indicator

■ Recommended Tests

Test Name	Type	Priority	Rationale
MEFV gene sequencing	Laboratory	Urgent	Diagnostic confirmation
Complete blood count with differential	Laboratory	Urgent	Diagnostic confirmation
Comprehensive metabolic panel	Laboratory	Urgent	Diagnostic confirmation
Erythrocyte sedimentation rate (ESR)	Laboratory	Urgent	Diagnostic confirmation
C-reactive protein (CRP)	Laboratory	Urgent	Diagnostic confirmation

■ Immediate Management

Intervention	Category	Urgency	Clinical Reasoning
Confirm FMF diagnosis with genetic testing for MEFV gene mutations	Medical	Immediate	Critical intervention
Assess current disease activity and attack frequency	Medical	Immediate	Critical intervention
Evaluate for complications including amyloidosis	Medical	Immediate	Critical intervention

Intervention	Category	Urgency	Clinical Reasoning
Review family history and genetic counseling referral	Medical	Immediate	Critical intervention

■ Medications

Medication	Dosage	Route/Frequency	Indication
Colchicine	0.6 mg	oral / twice daily	prevention of FMF attacks and amyloidosis
Anakinra	100 mg	subcutaneous / daily	refractory FMF attacks

Diagnostic Landscape Analysis

Detailed Diagnostic Analysis

The ensemble analysis identified **Familial Mediterranean Fever (FMF)** as the primary diagnosis with 0.0% consensus among 3 models.

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Periodic Fever Syndrome (other types) *Evidence: Episodic fever pattern*	3.7%	1 models	Unlikely
Systemic Juvenile Idiopathic Arthritis *Evidence: Systemic inflammatory features, Arthritis symptoms*	7.4%	2 models	Unlikely
Autoinflammatory Syndrome Transthyretin-Related (ATTR) *Evidence: Protein misfolding disorder*	3.7%	1 models	Unlikely
Chronic Recurrent Fever Syndrome *Evidence: Recurrent fever episodes*	3.7%	1 models	Unlikely
Adult-Onset Still's Disease (AOSD) *Evidence: Adult inflammatory arthritis, Systemic symptoms*	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: Model 1

• **Systemic Juvenile Idiopathic Arthritis** (ICD-10: Unknown) - 7.4% agreement (2 models)

Supporting Models: Model 1, Model 3

• **Autoinflammatory Syndrome Transthyretin-Related (ATTR)** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: Model 2

• **Chronic Recurrent Fever Syndrome** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: Model 2

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

Supporting Models: Model 3

Additional Diagnoses Considered:

Management Strategies & Clinical Pathways

Immediate Actions Required

Priority	Action	Rationale	Consensus
1	Confirm FMF diagnosis with genetic testing for MEFV gene mutations	Clinical indication	50%
2	Assess current disease activity and attack frequency	Clinical indication	50%
3	Evaluate for complications including amyloidosis	Clinical indication	50%
4	Review family history and genetic counseling referral	Clinical indication	50%

Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
MEFV gene sequencing	Diagnostic confirmation	Routine	As indicated
Complete blood count with differential	Diagnostic confirmation	Routine	As indicated
Comprehensive metabolic panel	Diagnostic confirmation	Routine	As indicated
Erythrocyte sedimentation rate (ESR)	Diagnostic confirmation	Routine	As indicated
C-reactive protein (CRP)	Diagnostic confirmation	Routine	As indicated
Serum amyloid A (SAA)	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-2-9b-it	USA	Free	Free	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: 0.9

Differential Diagnoses:

- Periodic Fever Syndrome (other types) (ICD: E85.8) - 0.6
- Systemic Juvenile Idiopathic Arthritis (ICD: M08.2) - 0.4
- Acute Intermittent Porphyria (ICD: E80.21) - 0.3

Key Clinical Findings:

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

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

Primary Diagnosis: Familial Mediterranean Fever (FMF) (ICD-10: M00.8) - Confidence: 0.85

Differential Diagnoses:

- Autoinflammatory Syndrome Transthyretin-Related (ATTR) (ICD: D50.8) - 0.1
- Chronic Recurrent Fever Syndrome (ICD: R51.9) - 0.05
- Inflammatory Bowel Disease (IBD) (ICD: K50) - 0.08

Key Clinical Findings:

- Recurrent episodes of fever
- Severe abdominal pain
- Chest pain with breathing difficulties
- Joint pain

3. 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:

- Systemic Juvenile Idiopathic Arthritis (SJIA) (ICD: M08.0) - 0.6
- Adult-Onset Still's Disease (AOSD) (ICD: M05.8) - 0.5
- Inflammatory Bowel Disease (IBD) - Crohn's Disease or Ulcerative Colitis (ICD: K50.-) - 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)