MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: custom_20250909_124622	Title: A 28-year-old male of Mediterranean descent presents with: -...	Generated: 2025-09-09 12:47

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever *Evidence: Mediterranean descent, recurrent fever, abdominal pain, chest pain with breathing difficulties, joint pain, family history, attacks every 2-3 weeks, labs show elevated CRP, ESR, WBC, asymptomatic between attacks, started age 7, genetic testing pending*	E85.0	0.0%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Periodic Fever Syndrome (other types) *Evidence: recurring fever, abdominal pain, chest pain, joint pain*	E85.8	3.7%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis *Evidence: recurring fever, joint pain, elevated inflammatory markers*	M08.2	3.7%	Minority (<10%)
Behçet's Disease *Evidence: recurrent oral ulcers, genital ulcers, uveitis, skin lesions*	M35.2	0.0%	Minority (<10%)
Takayasu's Arteritis *Evidence: systemic inflammation, vascular involvement, elevated inflammatory markers*	M31.0	0.0%	Minority (<10%)
Relapsing Polychondritis *Evidence: recurring inflammation of cartilage, especially ears and nose*	M35.0	0.0%	Minority (<10%)
Sarcoidosis *Evidence: granulomatous inflammation, multi-organ involvement*	D86.9	0.0%	Minority (<10%)

Diagnosis	ICD-10	Support	Type
Wegener's Granulomatosis *Evidence: granulomatous inflammation, upper and lower respiratory tract involvement, renal involvement*	M31.3	0.0%	Minority (<10%)
Churg-Strauss Syndrome *Evidence: asthma, eosinophilia, systemic vasculitis*	M31.5	0.0%	Minority (<10%)
Polyarteritis Nodosa *Evidence: systemic vasculitis, multi-organ involvement, elevated inflammatory markers*	M30.0	0.0%	Minority (<10%)
Microscopic Polyangiitis *Evidence: systemic vasculitis, renal involvement, elevated inflammatory markers*	M31.8	0.0%	Minority (<10%)

Analysis Overview

Models Queried: 3

Successful Responses: 3

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	Systemic	Behçet's	Takayasu	Relapsin	Sarcoido	Wegener'
recurrent fever	Strong	Moderate	Moderate	-	-	-	-	-
abdominal pain	Strong	Moderate	-	-	-	-	-	-
chest pain with	Strong	Moderate	-	-	-	-	-	-
joint pain	Strong	Moderate	Moderate	-	-	-	-	-
elevated CRP, E	Strong	Moderate	Moderate	-	-	-	-	-
asymptomatic be	Strong	-	-	-	-	-	-	-
family history	Strong	-	-	-	-	-	-	-
Mediterranean d	Strong	-	-	-	-	-	-	-
started age 7	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
Mediterranean descent	Clinical presentation	Key diagnostic indicator
recurrent fever	Clinical presentation	Key diagnostic indicator
abdominal pain	Clinical presentation	Key diagnostic indicator
chest pain with breathing difficulties	Clinical presentation	Key diagnostic indicator
joint pain	Clinical presentation	Key diagnostic indicator

■ Recommended Tests

Test Name	Type	Priority	Rationale
Genetic testing for MEFV gene mutations	Laboratory	Urgent	Diagnostic confirmation
CRP, ESR, WBC tests	Laboratory	Urgent	Diagnostic confirmation

■ Immediate Management

Intervention	Category	Urgency	Clinical Reasoning
Genetic testing for MEFV gene mutations	Medical	Immediate	Critical intervention

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 Syndrome (other types) *Evidence: recurring fever, abdominal pain, chest pain, joint pain*	3.7%	1 models	Unlikely
Systemic Juvenile Idiopathic Arthritis *Evidence: recurring fever, joint pain, elevated inflammatory markers*	3.7%	1 models	Unlikely
Behçet's Disease *Evidence: recurrent oral ulcers, genital ulcers, uveitis, skin lesions*	0.0%	0 models	Unlikely
Takayasu's Arteritis *Evidence: systemic inflammation, vascular involvement, elevated inflammatory markers*	0.0%	0 models	Unlikely
Relapsing Polychondritis *Evidence: recurring inflammation of cartilage, especially ears and nose*	0.0%	0 models	Unlikely
Sarcoidosis *Evidence: granulomatous inflammation, multi-organ involvement*	0.0%	0 models	Unlikely
Wegener's Granulomatosis *Evidence: granulomatous inflammation, upper and lower respiratory tract involvement, renal involvement*	0.0%	0 models	Unlikely
Churg-Strauss Syndrome *Evidence: asthma, eosinophilia, systemic vasculitis*	0.0%	0 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
- **Behçet's Disease** (ICD-10: Unknown) - 0.0% agreement (0 models)

Supporting Models:

- **Takayasu's Arteritis** (ICD-10: Unknown) - 0.0% agreement (0 models)

  Supporting Models:

- **Relapsing Polychondritis** (ICD-10: Unknown) - 0.0% agreement (0 models)

  Supporting Models:

- **Sarcoidosis** (ICD-10: Unknown) - 0.0% agreement (0 models)

  Supporting Models:

- **Wegener's Granulomatosis** (ICD-10: Unknown) - 0.0% agreement (0 models)

  Supporting Models:

- **Churg-Strauss Syndrome** (ICD-10: Unknown) - 0.0% agreement (0 models)

  Supporting Models:

- **Polyarteritis Nodosa** (ICD-10: Unknown) - 0.0% agreement (0 models)

  Supporting Models:

- **Microscopic Polyangiitis** (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	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
CRP, ESR, WBC tests	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
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 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:

- Mediterranean descent
- Recurrent self-limited febrile episodes
- Serositis (abdominal pain, pleuritic chest pain)
- Family history of similar symptoms

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

Primary Diagnosis: Familial Mediterranean Fever (FMF) (ICD-10: M39.0) - Confidence: 0.8

Differential Diagnoses:

- Ankylosing Spondylitis (ICD: M45.0) - 0.3
- Reactive Arthritis (ICD: M40.0) - 0.2
- Hyperimmunoglobulin D Syndrome (ICD: D89.7) - 0.2

Key Clinical Findings:

- Recurrent fever, abdominal pain, chest pain, joint pain, family history of similar symptoms

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