

# MEDLEY

## Medical AI Ensemble Clinical Decision Report

Case ID: Case\_1

Title: Case 1: Young Male with Recurrent Abdominal Pain and Mediterranean Heritage

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### Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever	E85.0	40.7%	Moderate	PRIMARY

### Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Familial Mediterranean Fever (FMF)	E85.0	33.3%	Strong Alt (≥30%)
Inflammatory Bowel Disease (IBD)	K50.9	22.2%	Alternative (20-29%)
Systemic Lupus Erythematosus	M32.9	22.2%	Alternative (20-29%)
Systemic Lupus Erythematosus (SLE)	M32.9	22.2%	Alternative (20-29%)
Septic Arthritis	Unknown	18.5%	Alternative (20-29%)
Reactive Arthritis	M02.9	14.8%	Alternative (20-29%)
Acute Appendicitis	Unknown	14.8%	Alternative (20-29%)
Inflammatory Bowel Disease	K50.9	11.1%	Alternative (20-29%)
Infectious Arthritis	Unknown	11.1%	Alternative (20-29%)
Psoriatic Arthritis	Unknown	7.4%	Minority (<20%)
Behçet's Disease	Unknown	7.4%	Minority (<20%)
Autoinflammatory Syndrome	Unknown	7.4%	Minority (<20%)
Appendicitis	Unknown	7.4%	Minority (<20%)
Gout	Unknown	7.4%	Minority (<20%)
Inflammatory Bowel Disease (Crohn's Disease)	K50.9	3.7%	Minority (<20%)
Tuberculosis	Unknown	3.7%	Minority (<20%)
Familial Mediterranean fever (FMF)	E85.0	3.7%	Minority (<20%)
Hyper IgD syndrome (Mevalonate kinase deficiency)	Unknown	3.7%	Minority (<20%)
Crohn disease (Inflammatory bowel disease)	K50.9	3.7%	Minority (<20%)

Diagnosis	ICD-10	Support	Type
Autoinflammatory disease, unspecified (e.g., TRAPS)	Unknown	3.7%	Minority (<20%)
Acute Recurrent Peritonitis	K65.9	3.7%	Minority (<20%)
Gouty Arthritis	Unknown	3.7%	Minority (<20%)
Acute Intermittent Porphyrria	Unknown	3.7%	Minority (<20%)
Infectious/Tuberculous Peritonitis	Unknown	3.7%	Minority (<20%)
Infectious arthritis (e.g., septic arthritis)	Unknown	3.7%	Minority (<20%)
Ankylosing Spondylitis	Unknown	3.7%	Minority (<20%)
Inflammatory Bowel Disease with extraintestinal manifestations	K50.9	3.7%	Minority (<20%)
TNF Receptor Associated Periodic Syndrome (TRAPS)	Unknown	3.7%	Minority (<20%)
Crohn's Disease	K50.9	3.7%	Minority (<20%)
Ulcerative Colitis	K51.9	3.7%	Minority (<20%)
Irritable Bowel Syndrome	Unknown	3.7%	Minority (<20%)
Appendicitis (recurrent or atypical)	Unknown	3.7%	Minority (<20%)
Infectious etiology (e.g., intra-abdominal abscess, pelvic inflammatory disease)	Unknown	3.7%	Minority (<20%)
Inflammatory Bowel Disease (IBD) - Crohn's Disease	K50.9	3.7%	Minority (<20%)
Periodic Fever, Aphthous Stomatitis, Pharyngitis, and Adenitis (PFAPA) Syndrome	R50.9	3.7%	Minority (<20%)
Periodic Fever, Aphthous Stomatitis, Pharyngitis, and Adenitis Syndrome	R50.9	3.7%	Minority (<20%)
Seronegative Spondyloarthritis	Unknown	3.7%	Minority (<20%)
Adult-onset Still's Disease	Unknown	3.7%	Minority (<20%)
Crohn's Disease (Inflammatory Bowel Disease)	K50.9	3.7%	Minority (<20%)
Acute Intermittent Porphyrria (AIP)	Unknown	3.7%	Minority (<20%)
Torsion of the intestine, possibly related to Crohn's disease	K50.9	3.7%	Minority (<20%)
Diverticulitis	Unknown	3.7%	Minority (<20%)
Inflammatory bowel disease (IBD)	K50.9	3.7%	Minority (<20%)
Systemic lupus erythematosus (SLE)	M32.9	3.7%	Minority (<20%)
Rheumatic fever	Unknown	3.7%	Minority (<20%)
Abdominal tuberculosis	Unknown	3.7%	Minority (<20%)
Recurrent Peritonitis due to Amyloidosis	K65.9	3.7%	Minority (<20%)
Recurrent Peritonitis due to Appendiceal Perforation	K65.9	3.7%	Minority (<20%)
Recurrent Peritonitis due to Appendicitis	K65.9	3.7%	Minority (<20%)

Diagnosis	ICD-10	Support	Type
Recurrent Peritonitis due to Inflammatory Bowel Disease (IBD)	K65.9	3.7%	Minority (<20%)
Acute intermittent porphyria	Unknown	3.7%	Minority (<20%)
Systemic lupus erythematosus	M32.9	3.7%	Minority (<20%)
Hereditary angioedema	Unknown	3.7%	Minority (<20%)
Rheumatic Fever	Unknown	3.7%	Minority (<20%)

Analysis Overview
Models Queried: 27
Successful Responses: 27
Consensus Level: Low
Total Estimated Cost: \$0.101

# 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/Finding	Familial Med	Familial Med	Inflammatory	Systemic Lup
Fever	+++	+++	+++	+++
Nausea	-	-	-	-
Pain	+++	+++	+++	+++
Vomiting	-	-	-	-
Primary Clinica	+++	+++	+++	+++

Legend: +++ Strong association, ++ Moderate, + Weak, - Not typical

## Diagnostic Decision Tree

Step	Action	If Positive	If Negative
1	Initial diagnostic workup	Confirm Familial Mediterranean Fever	Consider alternatives

# Executive Summary

## Case Description

Patient: A 26-year-old male patient of Mediterranean descent (parents are from Turkey)

Presenting Symptoms:

- Recurrent episodes of severe abdominal pain over the past 8 years
- Episodes last 1-3 days and occur approximately once a month
- Pain is diffuse throughout the abdomen, intense (8-9/10), and accompanied by fever (38-39°C)
- During episodes: experiences nausea, vomiting, and sometimes constipation
- Between episodes: completely asymptomatic

Associated Features:

- Chest pain during some episodes (pleuritic in nature)
- Joint pain in knees and ankles during episodes (arthralgia without visible swelling)
- Father has similar episodes of abdominal pain
- One younger sister has been diagnosed with recurrent pericarditis

Physical Examination (during episode):

- Temperature: 38.7°C
- Abdomen: Diffusely tender with guarding, no rebound tenderness
- No hepatosplenomegaly
- No skin rashes or lesions
- Joint examination: Mild tenderness in ankles, no effusion or erythema

Laboratory Results (during episode):

- WBC: 15,000/mm<sup>3</sup> (elevated)
- CRP: 120 mg/L (markedly elevated)
- ESR: 85 mm/hr (elevated)
- Serum amyloid A: Significantly elevated
- Urinalysis: Trace proteinuria

Laboratory Results (between episodes):

- All inflammatory markers return to normal
- No proteinuria

Previous Workup:

- Multiple CT scans during episodes: Mild peritoneal thickening, no specific pathology
- Colonoscopy: Normal
- Upper endoscopy: Normal
- Diagnostic laparoscopy during an episode: Sterile peritoneal fluid with neutrophilic infiltration

Treatment History:

- NSAIDs provide minimal relief during episodes
- Antibiotics tried empirically with no benefit
- Steroids provide some symptom relief but episodes recur upon tapering

Current Status:

- Episodes significantly impact quality of life
- Has missed considerable work due to episodes
- Seeking definitive diagnosis and long-term management strategy

## **Key Clinical Findings**

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

## **Primary Recommendations**

- Consider Familial Mediterranean Fever among differential diagnoses
- Address primary concern: Familial Mediterranean Fever

## Primary Diagnosis Clinical Summaries

Orchestrated analysis not available for this case.

# Diagnostic Landscape Analysis

## Detailed Diagnostic Analysis

The ensemble analysis identified **Familial Mediterranean Fever** as the primary diagnosis with 40.7% consensus among 0 models.

## Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Familial Mediterranean Fever (FMF)	33.3%	0 models	Worth investigating
Inflammatory Bowel Disease (IBD)	22.2%	0 models	Less likely
Systemic Lupus Erythematosus	22.2%	0 models	Less likely
Systemic Lupus Erythematosus (SLE)	22.2%	0 models	Less likely
Septic Arthritis	18.5%	0 models	Less likely
Reactive Arthritis	14.8%	0 models	Less likely
Acute Appendicitis	14.8%	0 models	Less likely
Inflammatory Bowel Disease	11.1%	0 models	Less likely

## Minority Opinions

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

- **Psoriatic Arthritis** (ICD-10: Unknown) - 7.4% agreement (0 models)  
Supporting Models:
- **Behçet's Disease** (ICD-10: Unknown) - 7.4% agreement (0 models)  
Supporting Models:
- **Autoinflammatory Syndrome** (ICD-10: Unknown) - 7.4% agreement (0 models)  
Supporting Models:
- **Appendicitis** (ICD-10: Unknown) - 7.4% agreement (0 models)  
Supporting Models:
- **Gout** (ICD-10: Unknown) - 7.4% agreement (0 models)  
Supporting Models:
- **Inflammatory Bowel Disease (Crohn's Disease)** (ICD-10: K50.9) - 3.7% agreement (0 models)  
Supporting Models:
- **Tuberculosis** (ICD-10: Unknown) - 3.7% agreement (0 models)  
Supporting Models:
- **Familial Mediterranean fever (FMF)** (ICD-10: E85.0) - 3.7% agreement (0 models)  
Supporting Models:



- **Hyper IgD syndrome (Mevalonate kinase deficiency)** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

- **Crohn disease (Inflammatory bowel disease)** (ICD-10: K50.9) - 3.7% agreement (0 models)

Supporting Models:

- **Autoinflammatory disease, unspecified (e.g., TRAPS)** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

- **Acute Recurrent Peritonitis** (ICD-10: K65.9) - 3.7% agreement (0 models)

Supporting Models:

- **Gouty Arthritis** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

- **Acute Intermittent Porphyrism** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

- **Infectious/Tuberculous Peritonitis** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

- **Infectious arthritis (e.g., septic arthritis)** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

- **Ankylosing Spondylitis** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

- **Inflammatory Bowel Disease with extraintestinal manifestations** (ICD-10: K50.9) - 3.7% agreement (0 models)

Supporting Models:

- **TNF Receptor Associated Periodic Syndrome (TRAPS)** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

- **Crohn's Disease** (ICD-10: K50.9) - 3.7% agreement (0 models)

Supporting Models:

- **Ulcerative Colitis** (ICD-10: K51.9) - 3.7% agreement (0 models)

Supporting Models:

- **Irritable Bowel Syndrome** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

- **Appendicitis (recurrent or atypical)** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

- **Infectious etiology (e.g., intra-abdominal abscess, pelvic inflammatory disease)** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

- **Inflammatory Bowel Disease (IBD) - Crohn's Disease** (ICD-10: K50.9) - 3.7% agreement (0 models)

Supporting Models:

• **Periodic Fever, Aphthous Stomatitis, Pharyngitis, and Adenitis (PFAPA) Syndrome** (ICD-10: R50.9) - 3.7% agreement (0 models)

Supporting Models:

• **Periodic Fever, Aphthous Stomatitis, Pharyngitis, and Adenitis Syndrome** (ICD-10: R50.9) - 3.7% agreement (0 models)

Supporting Models:

• **Seronegative Spondyloarthritis** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

• **Adult-onset Still's Disease** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

• **Crohn's Disease (Inflammatory Bowel Disease)** (ICD-10: K50.9) - 3.7% agreement (0 models)

Supporting Models:

• **Acute Intermittent Porphyria (AIP)** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

• **Torsion of the intestine, possibly related to Crohn's disease** (ICD-10: K50.9) - 3.7% agreement (0 models)

Supporting Models:

• **Diverticulitis** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

• **Inflammatory bowel disease (IBD)** (ICD-10: K50.9) - 3.7% agreement (0 models)

Supporting Models:

• **Systemic lupus erythematosus (SLE)** (ICD-10: M32.9) - 3.7% agreement (0 models)

Supporting Models:

• **Rheumatic fever** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

• **Abdominal tuberculosis** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

• **Recurrent Peritonitis due to Amyloidosis** (ICD-10: K65.9) - 3.7% agreement (0 models)

Supporting Models:

• **Recurrent Peritonitis due to Appendiceal Perforation** (ICD-10: K65.9) - 3.7% agreement (0 models)

Supporting Models:

• **Recurrent Peritonitis due to Appendicitis** (ICD-10: K65.9) - 3.7% agreement (0 models)

Supporting Models:

• **Recurrent Peritonitis due to Inflammatory Bowel Disease (IBD)** (ICD-10: K65.9) - 3.7% agreement (0 models)

Supporting Models:

• **Acute intermittent porphyria** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

• **Systemic lupus erythematosus** (ICD-10: M32.9) - 3.7% agreement (0 models)

Supporting Models:

- **Hereditary angioedema** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

- **Rheumatic Fever** (ICD-10: Unknown) - 3.7% agreement (0 models)

Supporting Models:

# Management Strategies & Clinical Pathways

## Immediate Actions Required

Priority	Action	Rationale	Consensus
1	Address primary concern: Familial Mediterranean Fever	Evidence-based management of primary condition	High

## Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
Comprehensive evaluation	Confirm Familial Mediterranean Fever diagnosis	High	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
mistral-7b-inst	France	Budget	Free	Reactive Arthritis	General
grok-4	USA	Premium	\$0.039	Familial Mediterranean Fever	Alternative
gpt-oss-120b	USA	Mid-Range	Free	Familial Mediterranean fever	Standard
command-r	Canada	Mid-Range	<\$0.01	Acute Recurrent Peritonitis	Standard
deepseek-chat	China	Budget	Free	Familial Mediterranean Fever	Regional
gemini-2.5-pro	USA	Premium	Free	Familial Mediterranean Fever	General
free	China	Unknown	<\$0.01	Familial Mediterranean Fever	General
deepseek-r1	China	Budget	<\$0.01	Familial Mediterranean Fever	Regional
free	France	Unknown	<\$0.01	Reactive Arthritis	General
sonar-deep-rese	USA	Premium	Free	Familial Mediterranean Fever	Standard
jamba-large-1.7	Israel	Premium	Free	Familial Mediterranean Fever	Standard
free	USA	Unknown	<\$0.01	Crohn's Disease	General
gemini-2.5-flas	USA	Budget	Free	Familial Mediterranean Fever	General
mistral-large-2	France	Premium	Free	Familial Mediterranean Fever	Standard
command-r-plus	Canada	Premium	\$0.027	Familial Mediterranean Fever	Standard
wizardlm-2-8x22	USA	Mid-Range	<\$0.01	Familial Mediterranean Fever	Standard
grok-2-1212	USA	Premium	\$0.017	Familial Mediterranean Fever	Standard
gemma-2-9b-it	USA	Budget	Free	Familial Mediterranean Fever	Standard
gpt-4o	USA	Premium	Free	Familial Mediterranean Fever	Comprehensive
gemini-2.5-flas	USA	Budget	<\$0.01	Familial Mediterranean Fever	General
llama-3.2-3b-in	USA	Budget	Free	Torsion of the intestine, possibly related to Crohn's disease	General
gpt-4o-mini	USA	Budget	Free	Familial Mediterranean Fever	General
qwen-2.5-coder-	China	Mid-Range	<\$0.01	Recurrent Peritonitis due to Amyloidosis	Regional
free	USA	Unknown	<\$0.01	Reactive Arthritis	General
deepseek-chat-v	China	Budget	<\$0.01	Familial Mediterranean Fever	Regional
claude-3-opus-2	USA	Premium	Free	Familial Mediterranean Fever	Comprehensive
lfm-40b	USA	Mid-Range	Free	Familial Mediterranean Fever	Standard

\*\*Total Estimated Cost: \$0.101\*\*

### 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.

### Primary Diagnosis Bias Factors:

- Cultural: Models from 6 countries with Western dominance may miss cultural factors. Chinese models (14.8%) provide alternative perspective.
- Geographic: Western model dominance (92.6%) creates strong bias toward Western medical paradigms. High Western medical paradigm influence expected
- Training Data: English-dominant training data creates systematic bias against non-Western medical practices and symptom presentations.

### Alternative Diagnoses Bias:

- Missed: Traditional Medicine Conditions - Western model dominance may miss traditional medicine diagno...
- Missed: Socioeconomic-Related Conditions - Homeless status bias may cause dismissive attitudes and miss...

### Bias Mitigation Recommendations:

- Socioeconomic Bias: Consider cultural context in diagnosis interpretation
- Geographic/Cultural Bias: Incorporate diverse cultural perspectives in diagnosis

## Detailed Model Responses

Complete diagnostic assessments from each model:

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

### 2. grok-4 (USA, Released: 2024-12-26)

**Primary Diagnosis:** Familial Mediterranean Fever (ICD-10: M04.1) - Confidence: 0.9

*Reasoning:* Recurrent self-resolving episodes of fever, abdominal pain with peritoneal signs, arthritis, elevated inflammatory markers, and family history in a patient from a region with higher prevalence of this...

**Differential Diagnoses:**

- Behçet's Disease (ICD: M35.2) - 0.6
- Systemic Lupus Erythematosus (ICD: M32.9) - 0.4
- Inflammatory Bowel Disease (Crohn's Disease) (ICD: K50.9) - 0.5

**Key Clinical Findings:**

- Recurrent self-resolving episodes of severe abdominal pain, fever, and arthritis
- Family history of similar episodes
- Elevated CRP and ESR with peritoneal signs
- Patient's Somali origin suggesting genetic predisposition

**Recommended Tests:**

- Genetic testing for MEFV gene mutations - Confirm FMF diagnosis
- Complete blood count and blood cultures - Rule out infection
- Abdominal ultrasound or CT - Evaluate for peritonitis or other abdominal pathology

**Immediate Management:**

- Provide interpreter services for accurate history and consent
- Administer IV fluids and supportive care for pain and fever

**Medications:**

- Colchicine 0.6 mg PO
- Ibuprofen 400 mg PO

### 3. gpt-oss-120b (USA, Released: 2025-08-05)

### 4. command-r (Canada, Released: 2024-03-11)

**Primary Diagnosis:** Acute Recurrent Peritonitis (ICD-10: R11) - Confidence: 0.85

*Reasoning:* Recurrent abdominal pain with peritoneal signs suggests peritonitis. Cultural context of patient's immigrant background adds relevance to this diagnosis....

**Differential Diagnoses:**

- Familial Mediterranean Fever (ICD: M30.0) - 0.75
- Gouty Arthritis (ICD: M10) - 0.6
- Septic Arthritis (ICD: M00-M03) - 0.55

**Key Clinical Findings:**

- Recurrent severe abdominal pain with peritoneal signs
- Fever spikes and arthritis involving knees and ankles

**Recommended Tests:**

- Complete Blood Count - Evaluate for inflammation/infection markers
- Inflammatory markers: CRP, ESR - Confirm systemic inflammation
- Urate Level - Rule out gout

**Immediate Management:**

- Initiate IV fluids for hydration and pain control
- Start empirical antibiotic therapy: Ceftriaxone for suspected bacterial etiology

**Medications:**

- Ceftriaxone 1g daily IV
- Colchicine 1.2mg initially, then 0.6mg daily PO

## 5. deepseek-chat (China, Released: 2024-12-20)

**Primary Diagnosis:** Familial Mediterranean Fever (ICD-10: E85.0) - Confidence: 0.9

*Reasoning:* Recurrent episodes of fever, abdominal pain, and arthritis in a patient of Somali origin with family history of similar episodes strongly suggests Familial Mediterranean Fever....

**Differential Diagnoses:**

- Acute Appendicitis (ICD: K35.80) - 0.3
- Systemic Lupus Erythematosus (ICD: M32.9) - 0.2
- Septic Arthritis (ICD: M00.9) - 0.2

**Key Clinical Findings:**

- Recurrent episodes of severe abdominal pain
- Fever spikes to 39.5°C
- Arthritis affecting knees and ankles
- Peritoneal signs during episodes

**Recommended Tests:**

- Genetic testing for MEFV mutations - Confirm diagnosis of Familial Mediterranean Fever
- Complete blood count (CBC) - Assess for leukocytosis and other abnormalities
- Serum amyloid A (SAA) level - Assess amyloidosis risk

**Immediate Management:**



- Initiate colchicine therapy
- Provide pain management
- Ensure adequate hydration

**Medications:**

- Colchicine 0.5 mg twice daily PO
- Acetaminophen 500-1000 mg every 6 hours PO

## 6. gemini-2.5-pro (USA, Released: 2024-12-19)

## 7. free (China, Released: 2024-12-20)

**Primary Diagnosis:** Familial Mediterranean Fever (ICD-10: E85.0) - Confidence: 0.9

*Reasoning:* Recurrent episodes of fever, abdominal pain, and arthritis in a patient of Somali descent with a family history of similar episodes strongly suggest Familial Mediterranean Fever (FMF). Elevated CRP an...

**Differential Diagnoses:**

- Acute Appendicitis (ICD: K35.80) - 0.3
- Systemic Lupus Erythematosus (ICD: M32.9) - 0.2
- Inflammatory Bowel Disease (ICD: K50.90) - 0.2

**Key Clinical Findings:**

- Recurrent episodes of severe abdominal pain and fever
- Arthritis affecting knees and ankles
- Elevated CRP and ESR during episodes
- Family history of similar episodes

**Recommended Tests:**

- MEFV gene testing - Confirm diagnosis of Familial Mediterranean Fever
- Abdominal ultrasound - Rule out other causes of abdominal pain
- Complete blood count (CBC) - Assess for leukocytosis and anemia

**Immediate Management:**

- Provide pain relief
- Ensure hydration

**Medications:**

- Colchicine 0.5 mg twice daily PO
- NSAIDs (e.g., Ibuprofen) 400-600 mg every 6-8 hours as needed PO

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

**Primary Diagnosis:** Familial Mediterranean Fever (FMF) (ICD-10: E85.0) - Confidence: 0.85

*Reasoning:* Recurrent episodic fever, serosal inflammation (peritoneal signs, arthritis), elevated acute-phase reactants, family history in a Somali patient, and lack of response to standard analgesics. FMF is pr...

#### **Differential Diagnoses:**

- Acute Intermittent Porphyria (ICD: E80.21) - 0.4
- Systemic Lupus Erythematosus (SLE) (ICD: M32.9) - 0.3
- Infectious/Tuberculous Peritonitis (ICD: A18.3) - 0.25

#### **Key Clinical Findings:**

- Recurrent febrile episodes with peritoneal signs
- Migratory arthritis (knees/ankles)
- Elevated CRP/ESR
- Family history of similar episodes

#### **Recommended Tests:**

- MEFV gene sequencing - Confirm FMF diagnosis
- Urinary porphobilinogen (during attack) - Rule out acute porphyria
- Abdominal ultrasound/CT - Assess for surgical abdomen/masses

#### **Immediate Management:**

- IV fluid resuscitation
- Surgical consultation to rule out acute abdomen

#### **Medications:**

- Colchicine 1.2 mg PO daily PO

## **9. free (France, Released: 2024-11-01)**

**Primary Diagnosis:** Reactive Arthritis (ICD-10: M45.9 (Reactive arthritis, unspecified)) - Confidence: 0.7

*Reasoning:* Recurrent episodes of abdominal pain, fever, arthritis affecting knees and ankles, peritoneal signs, elevated CRP and ESR, and history of similar episodes in family members....

#### **Differential Diagnoses:**

- Infectious arthritis (e.g., septic arthritis) (ICD: M10.9 (Infectious arthritis, unspecified)) - 0.3
- Ankylosing Spondylitis (ICD: M45.0 (Ankylosing spondylitis)) - 0.2
- Psoriatic Arthritis (ICD: M86.0 (Psoriatic arthritis, unspecified)) - 0.1

#### **Key Clinical Findings:**

- Recurrent episodes of severe abdominal pain
- Fever spikes to 39.5°C
- Arthritis affecting knees and ankles

#### **Recommended Tests:**

- Stool culture - To rule out infectious causes
- HLA-B27 - To support a diagnosis of Reactive Arthritis or Ankylosing Spondylitis
- Rheumatoid factor, Anti-CCP antibodies - To rule out Rheumatoid Arthritis

**Immediate Management:**

- Administer broad-spectrum antibiotics
- Provide analgesics for pain management

**Medications:**

- Ciprofloxacin 500mg PO BID PO

**10. sonar-deep-rese (USA, Released: 2025-03-07)****11. jamba-large-1.7 (Israel, Released: 2025-07-01)**

**Primary Diagnosis:** Familial Mediterranean Fever (FMF) (ICD-10: E85.0) - Confidence: 0.85

*Reasoning:* Recurrent episodes of severe abdominal pain, fever, and arthritis in a patient from a region where FMF is more prevalent, and with a family history of similar symptoms, strongly suggest this diagnosis...

**Differential Diagnoses:**

- Acute Appendicitis (ICD: K35.80) - 0.6
- Systemic Lupus Erythematosus (SLE) (ICD: M32.9) - 0.5
- Infectious Arthritis (ICD: M00.9) - 0.4

**Key Clinical Findings:**

- Recurrent abdominal pain and fever
- Arthritis affecting knees and ankles
- Elevated CRP and ESR

**Recommended Tests:**

- Genetic testing for MEFV gene mutations - Confirm diagnosis of FMF
- Joint aspiration and culture - Rule out infectious arthritis
- Autoantibody panel (ANA, RF) - Rule out autoimmune conditions like SLE

**Immediate Management:**

- Admit to hospital for pain management and further evaluation
- Initiate empiric treatment with colchicine while awaiting diagnostic results

**Medications:**

- Colchicine 0.6 mg PO twice daily PO

**12. free (USA, Released: 2024-09-25)**

**Primary Diagnosis:** Crohn's Disease (ICD-10: K50.9) - Confidence: 0.8

*Reasoning:* Recent immigrant from Somalia with recurrent episodes of severe abdominal pain, fever, and arthritis, which are consistent with Crohn's Disease. The episodes resolve spontaneously, and the patient's l...

**Differential Diagnoses:**

- Ulcerative Colitis (ICD: K50.8) - 0.4
- Reactive Arthritis (ICD: M45.9) - 0.3
- Irritable Bowel Syndrome (ICD: K58.9) - 0.2

**Key Clinical Findings:**

- Severe abdominal pain during episodes
- Fever spikes to 39.5°C during episodes
- Arthritis affecting knees and ankles

**Recommended Tests:**

- Complete Blood Count (CBC) - To evaluate for inflammation and anemia
- Erythrocyte Sedimentation Rate (ESR) - To evaluate for inflammation
- Imaging studies (e.g., CT enterography) - To evaluate for gastrointestinal inflammation and structural changes

**Immediate Management:**

- Administering antibiotics to treat bacterial overgrowth
- Prescribing anti-inflammatory medications (e.g., aminosalicylates, corticosteroids)

**Medications:**

- Aminosalicylates (e.g., mesalamine) 400 mg PO twice daily PO

### 13. gemini-2.5-flas (USA, Released: 2024-12-19)

**Primary Diagnosis:** Familial Mediterranean Fever (FMF) (ICD-10: E85.0) - Confidence: 0.85

*Reasoning:* Recurrent episodes of severe abdominal pain, fever, and serositis with a family history suggestive of a similar condition in a patient from a region where FMF is endemic (Somalia has a Somali populati...

**Differential Diagnoses:**

- Appendicitis (recurrent or atypical) (ICD: K35.80) - 0.05
- Infectious etiology (e.g., intra-abdominal abscess, pelvic inflammatory disease) (ICD: Unknown) - 0.05
- Inflammatory Bowel Disease (IBD) - Crohn's Disease (ICD: K50.90) - 0.05

**Key Clinical Findings:**

- Recurrent severe abdominal pain with fever spikes
- Arthritis affecting knees and ankles
- Family history of similar episodes
- Elevated CRP and ESR during episodes

**Recommended Tests:**

- MEFV gene sequencing - To identify mutations associated with Familial Mediterranean Fever.
- Abdominal ultrasound or CT scan - To rule out other causes of abdominal pain and peritoneal signs like appendicitis, abscess, or bowel obstruction.
- Complete Blood Count (CBC) with differential - To assess for signs of infection or anemia.

**Immediate Management:**

- Provide pain relief with stronger analgesics, considering the possibility of inflammatory pain.
- Initiate intravenous fluids for hydration.
- Obtain all necessary laboratory tests and imaging.

#### **Medications:**

- Colchicine 0.5 mg twice daily (to be adjusted based on renal function and tolerance) PO
- Morphine or Hydromorphone As needed for severe pain (e.g., 2-4 mg IV q4-6h PRN) IV

## **14. mistral-large-2 (France, Released: 2024-11-01)**

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

*Reasoning:* Recurrent episodes of severe abdominal pain, fever, and arthritis, family history, and ethnic background suggestive of FMF....

#### **Differential Diagnoses:**

- Acute Appendicitis (ICD: K35.20) - 0.3
- Inflammatory Bowel Disease (IBD) (ICD: K50.90) - 0.2
- Septic Arthritis (ICD: M00.9) - 0.1

#### **Key Clinical Findings:**

- Recurrent episodes of severe abdominal pain
- Fever spikes to 39.5°C
- Arthritis affecting knees and ankles
- Episodes last 2-3 days and resolve spontaneously

#### **Recommended Tests:**

- Complete Blood Count (CBC) - Assess for infection or inflammation
- C-reactive protein (CRP) and Erythrocyte Sedimentation Rate (ESR) - Monitor inflammatory markers
- Genetic Testing for MEFV gene mutations - Confirm Familial Mediterranean Fever

#### **Immediate Management:**

- Hydration and supportive care
- Monitor vital signs and pain levels

#### **Medications:**

- Colchicine 0.6 mg PO daily PO
- Acetaminophen 650 mg PO every 4-6 hours PO

## **15. command-r-plus (Canada, Released: 2024-04-04)**

**Primary Diagnosis:** Familial Mediterranean Fever (FMF) (ICD-10: M8A00) - Confidence: 0.75

*Reasoning:* Patient's clinical presentation, family history, and ethnic background are highly suggestive of FMF, an autoinflammatory disorder common in certain ethnic groups including those from the Mediterranean...

#### **Differential Diagnoses:**

- Autoinflammatory Syndrome (ICD: M35.8) - 0.2
- Inflammatory Bowel Disease (IBD) (ICD: K50-K50.9) - 0.15
- Infectious Arthritis (ICD: M00-M03, M60) - 0.1

#### **Key Clinical Findings:**

- Recurrent episodes of severe abdominal pain, fever, and arthritis
- Family history of similar symptoms
- Patient's ethnic background from Somalia

#### **Recommended Tests:**

- Genetic Testing for MEFV mutations - Confirm diagnosis of FMF
- Complete Blood Count (CBC), Inflammatory Markers (CRP, ESR) - Assess inflammation and rule out infection
- Joint Fluid Analysis - Evaluate for infectious arthritis

#### **Immediate Management:**

- Start patient on a colchicine trial
- Refer patient to a rheumatologist for further evaluation and management

#### **Medications:**

- Colchicine Starting dose of 0.5-1 mg twice daily, adjusted as needed PO

## **16. wizardIm-2-8x22 (USA, Released: 2024-04-15)**

**Primary Diagnosis:** Familial Mediterranean Fever (FMF) (ICD-10: D84.1) - Confidence: 0.7

*Reasoning:* Recurrent episodes of fever, abdominal pain, and arthritis, along with a family history of similar episodes, are highly suggestive of FMF, which is common in individuals of Mediterranean and Middle Ea...

#### **Differential Diagnoses:**

- Systemic Lupus Erythematosus (SLE) (ICD: M32.1) - 0.5
- Inflammatory Bowel Disease (IBD) (ICD: K50.9) - 0.4
- Periodic Fever, Aphthous Stomatitis, Pharyngitis, and Adenitis (PFAPA) Syndrome (ICD: G25.1) - 0.3

#### **Key Clinical Findings:**

- Recurrent fever spikes up to 39.5°C
- Severe abdominal pain with peritoneal signs
- Arthritis affecting knees and ankles
- Elevated CRP and ESR

#### **Recommended Tests:**

- Genetic Testing for MEFV Gene Mutations - To confirm diagnosis of FMF
- Autoimmune Panel including ANA, dsDNA, ENA, and Anti-CCP - To rule in/out SLE and other autoimmune conditions
- Stool Culture and Calprotectin - To rule out infectious etiologies and IBD

#### **Immediate Management:**

- Administer broad-spectrum antibiotics if infection cannot be ruled out initially

- Provide adequate analgesia, potentially requiring opioids given unresponsiveness to standard analgesics

#### **Medications:**

- Colchicine 1.2-2.4 mg/day in divided doses PO

## **17. grok-2-1212 (USA, Released: 2024-12-12)**

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

*Reasoning:* Recurrent episodes of fever, abdominal pain, and arthritis with family history; common in Mediterranean populations including Somalis....

#### **Differential Diagnoses:**

- Systemic Lupus Erythematosus (ICD: M32.9) - 0.6
- Inflammatory Bowel Disease (ICD: K50.9) - 0.5
- Periodic Fever, Aphthous Stomatitis, Pharyngitis, and Adenitis Syndrome (ICD: E85.1) - 0.4

#### **Key Clinical Findings:**

- Recurrent episodes of fever and abdominal pain
- Family history of similar episodes

#### **Recommended Tests:**

- Genetic testing for MEFV gene mutation - Rule in Familial Mediterranean Fever
- Complete Blood Count (CBC) - Assess for signs of inflammation or infection
- Antinuclear Antibody (ANA) test - Rule out Systemic Lupus Erythematosus

#### **Immediate Management:**

- Initiate pain management and fever control
- Obtain detailed family history and past medical history

#### **Medications:**

- Colchicine 0.6 mg twice daily PO
- Ibuprofen 400-800 mg every 6-8 hours PO

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

**Primary Diagnosis:** Familial Mediterranean Fever (FMF) (ICD-10: M30.3) - Confidence: 0.7

*Reasoning:* Recurrent episodes of fever, abdominal pain, and arthritis, especially in the context of familial history and ethnicity, are highly suggestive of FMF. The lack of response to standard analgesics furth...

#### **Differential Diagnoses:**

- Seronegative Spondyloarthritis (ICD: M45.4) - 0.2
- Autoinflammatory Syndrome (ICD: Unknown) - 0.1
- Infectious Arthritis (ICD: M00-M09) - 0.05

#### **Key Clinical Findings:**

- Recurrent episodes of abdominal pain and fever

- Arthritis affecting knees and ankles
- Family history of similar symptoms
- Limited English proficiency

#### **Recommended Tests:**

- MEFV gene testing - Confirms diagnosis of FMF
- Complete blood count (CBC) - Rule out infection or anemia
- Erythrocyte Sedimentation Rate (ESR) and C-reactive Protein (CRP) - Assess inflammation

#### **Immediate Management:**

- Administer NSAIDs for pain relief
- Provide supportive care (hydration, rest)

#### **Medications:**

- Colchicine 0.6 mg orally three times daily PO

## **19. gpt-4o (USA, Released: 2024-05-13)**

**Primary Diagnosis:** Familial Mediterranean Fever (ICD-10: E85.0) - Confidence: 0.9

*Reasoning:* The patient's symptoms of recurrent abdominal pain, fever, arthritis, and family history are consistent with Familial Mediterranean Fever, which is prevalent in people from the Mediterranean region, i...

#### **Differential Diagnoses:**

- Systemic Lupus Erythematosus (ICD: M32.9) - 0.5
- Inflammatory Bowel Disease (ICD: K50.9) - 0.4
- Adult-onset Still's Disease (ICD: M06.1) - 0.3

#### **Key Clinical Findings:**

- Recurrent severe abdominal pain
- Fever spikes to 39.5°C

#### **Recommended Tests:**

- MEFV gene mutation analysis - To confirm Familial Mediterranean Fever
- ANA test - To rule out Systemic Lupus Erythematosus
- Stool test for inflammation markers - To rule out Inflammatory Bowel Disease

#### **Immediate Management:**

- Pain management with colchicine
- Hydration and fever control

#### **Medications:**

- Colchicine 0.6 mg PO

## **20. gemini-2.5-flas (USA, Released: 2024-12-19)**

**Primary Diagnosis:** Familial Mediterranean Fever (FMF) (ICD-10: E85.0) - Confidence: 0.9



*Reasoning:* Recurrent episodes of fever, severe abdominal pain (peritoneal signs), and arthritis, resolving spontaneously, with a familial history and ethnic background (Somali, a population with known FMF prevalence).

#### **Differential Diagnoses:**

- Crohn's Disease (Inflammatory Bowel Disease) (ICD: K50.9) - 0.6
- Systemic Lupus Erythematosus (SLE) (ICD: M32.9) - 0.5
- Acute Intermittent Porphyria (AIP) (ICD: E80.21) - 0.4

#### **Key Clinical Findings:**

- Recurrent episodes of severe abdominal pain with peritoneal signs
- Recurrent fever spikes (up to 39.5°C)
- Recurrent arthritis affecting knees and ankles
- Episodes last 2-3 days and resolve spontaneously

#### **Recommended Tests:**

- Genetic testing for MEFV gene mutations - To confirm the diagnosis of Familial Mediterranean Fever by identifying mutations in the MEFV gene.
- Acute phase reactants (CRP, ESR) during an episode - To confirm active inflammation during symptomatic periods.
- Comprehensive metabolic panel (CMP), CBC with differential - To assess overall organ function, electrolyte balance, and rule out other causes of fever/pain; assess for leukocytosis.

#### **Immediate Management:**

- Pain management with strong analgesics (e.g., opioids if necessary, given unresponsiveness to standard analgesics) and anti-inflammatory drugs (NSAIDs) during acute attacks.
- Antipyretics for fever control.
- IV fluids if signs of dehydration due to pain/fever.

#### **Medications:**

- Colchicine 0.6 mg PO
- NSAIDs (e.g., Ibuprofen or Naproxen) Variable, e.g., Ibuprofen 400-600 mg PO

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

## **22. gpt-4o-mini (USA, Released: 2024-07-18)**

**Primary Diagnosis:** Familial Mediterranean Fever (FMF) (ICD-10: M35.3) - Confidence: 0.85

*Reasoning:* The patient's recurrent abdominal pain, fever, and arthritis, along with a family history of similar episodes, suggest FMF, which is common in individuals of Mediterranean descent, including some populations.

#### **Differential Diagnoses:**

- Systemic lupus erythematosus (SLE) (ICD: M32) - 0.15
- Rheumatic fever (ICD: I00) - 0.05
- Abdominal tuberculosis (ICD: A18.2) - 0.05

**Key Clinical Findings:**

- Recurrent episodes of severe abdominal pain
- Elevated CRP and ESR

**Recommended Tests:**

- Genetic testing for MEFV mutations - To confirm diagnosis of Familial Mediterranean Fever
- Tuberculin skin test or IGRA - To rule out abdominal tuberculosis

**Immediate Management:**

- Administer fluids and electrolytes for hydration
- Initiate pain management with colchicine

**Medications:**

- Colchicine 1 mg initially, then 0.5 mg after 1 hour PO

## 23. qwen-2.5-coder- (China, Released: 2024-11-12)

**Primary Diagnosis:** Recurrent Peritonitis due to Amyloidosis (ICD-10: M91.0) - Confidence: 0.8

*Reasoning:* The recurrent episodes of severe abdominal pain, fever, and arthritis, coupled with peritoneal signs, elevated CRP and ESR, suggest a possible systemic inflammatory process, possibly amyloidosis affecting...

**Differential Diagnoses:**

- Recurrent Peritonitis due to Appendiceal Perforation (ICD: K30.1) - 0.6
- Recurrent Peritonitis due to Appendicitis (ICD: K30.0) - 0.5
- Recurrent Peritonitis due to Inflammatory Bowel Disease (IBD) (ICD: K50.9) - 0.5

**Key Clinical Findings:**

- Recurrent episodes of severe abdominal pain
- Peritoneal signs during episodes

**Recommended Tests:**

- Amyloid Protein Testing (e.g., Serum Amyloid A protein) - To rule in or out amyloidosis
- Abdominal Ultrasound - To assess for appendiceal pathology or other sources of peritonitis
- CT Scan of Abdomen and Pelvis - To evaluate for inflammatory or neoplastic causes of peritonitis

**Immediate Management:**

- Administer IV fluids to correct dehydration
- Initiate broad-spectrum antibiotics to cover potential infectious sources

**Medications:**

- Ciprofloxacin 400 mg IV every 12 hours IV

## 24. free (USA, Released: 2024-06-27)

**Primary Diagnosis:** Reactive Arthritis (ICD-10: M00.0) - Confidence: 0.7

*Reasoning:* The patient's presentation of recurrent episodes of abdominal pain, fever, arthritis affecting the knees and ankles, and improvement with time is suggestive of reactive arthritis. This is further supp...

#### **Differential Diagnoses:**

- Inflammatory Bowel Disease (IBD) (ICD: K50) - 0.2
- Gout (ICD: M10) - 0.1
- Septic Arthritis (ICD: J04) - 0.05

#### **Key Clinical Findings:**

- Recurrent episodes of abdominal pain
- Elevated CRP and ESR

#### **Recommended Tests:**

- Complete Blood Count (CBC) - Rule out infection and assess for anemia
- Urine Analysis - Rule out urinary tract infection as a potential trigger
- Joint Fluid Analysis - To assess for inflammation and rule out septic arthritis

#### **Immediate Management:**

- Administer intravenous fluids
- Start broad-spectrum antibiotics pending culture results

#### **Medications:**

- Ibuprofen 600 mg PO

## **25. deepseek-chat-v (China, Released: 2024-12-20)**

**Primary Diagnosis:** Familial Mediterranean Fever (ICD-10: E85.0) - Confidence: 0.85

*Reasoning:* Recurrent episodes of fever, abdominal pain, and arthritis in a patient of Somali descent with family history of similar episodes strongly suggest Familial Mediterranean Fever (FMF). Elevated CRP and ...

#### **Differential Diagnoses:**

- Appendicitis (ICD: K35.80) - 0.3
- Systemic Lupus Erythematosus (SLE) (ICD: M32.9) - 0.25
- Inflammatory Bowel Disease (IBD) (ICD: K50.90) - 0.2

#### **Key Clinical Findings:**

- Recurrent episodes of severe abdominal pain and fever
- Arthritis affecting knees and ankles

#### **Recommended Tests:**

- Genetic testing for MEFV mutations - Confirm diagnosis of Familial Mediterranean Fever
- Complete blood count (CBC) - Assess for leukocytosis or anemia
- Abdominal ultrasound - Rule out other causes of abdominal pain

#### **Immediate Management:**

- Provide pain relief with NSAIDs
- Monitor vital signs closely

#### **Medications:**

- Colchicine 0.6 mg twice daily PO
- Ibuprofen 400 mg every 6 hours as needed PO

## 26. claude-3-opus-2 (USA, Released: 2024-02-29)

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

*Reasoning:* Recurrent episodes of fever, abdominal pain, and arthritis in a young woman of Mediterranean descent, with similar family history, strongly suggests FMF....

### Differential Diagnoses:

- Acute intermittent porphyria (ICD: E80.21) - 0.4
- Systemic lupus erythematosus (ICD: M32.9) - 0.3
- Hereditary angioedema (ICD: D84.1) - 0.2

### Key Clinical Findings:

- Recurrent self-limited episodes of fever, abdominal pain, and arthritis
- Family history of similar episodes
- Mediterranean ancestry

### Recommended Tests:

- MEFV gene mutation analysis - Confirm diagnosis of FMF
- CBC with differential - Assess for leukocytosis or anemia
- CRP and ESR - Evaluate for acute inflammation

### Immediate Management:

- IV fluids for hydration
- Antipyretics for fever control

### Medications:

- Colchicine 0.6 mg PO BID PO

## 27. Ifm-40b (USA, Released: 2024-10-29)

**Primary Diagnosis:** Familial Mediterranean Fever (ICD-10: M35.81) - Confidence: 0.8

*Reasoning:* Recurrent episodes of fever and serositis, a history of similar episodes in family members, and the patient's ethnicity (Somali) suggest FMF, a genetic autoinflammatory disorder common in populations ...

### Differential Diagnoses:

- Rheumatic Fever (ICD: I00) - 0.6
- Gout (ICD: M10.9) - 0.5
- Systemic Lupus Erythematosus (SLE) (ICD: M32.15) - 0.4

### Key Clinical Findings:

- Recurrent episodes of severe abdominal pain
- Fever spikes to 39.5°C

**Recommended Tests:**

- Genetic testing for FMF - Confirm or rule out genetic predisposition
- Full blood count - Rule out infection and anemia
- CRP and ESR - Monitor inflammatory markers

**Immediate Management:**

- Administer NSAIDs for pain management
- Start colchicine for FMF management

**Medications:**

- Colchicine 1.0-1.5 mg/day in divided doses PO