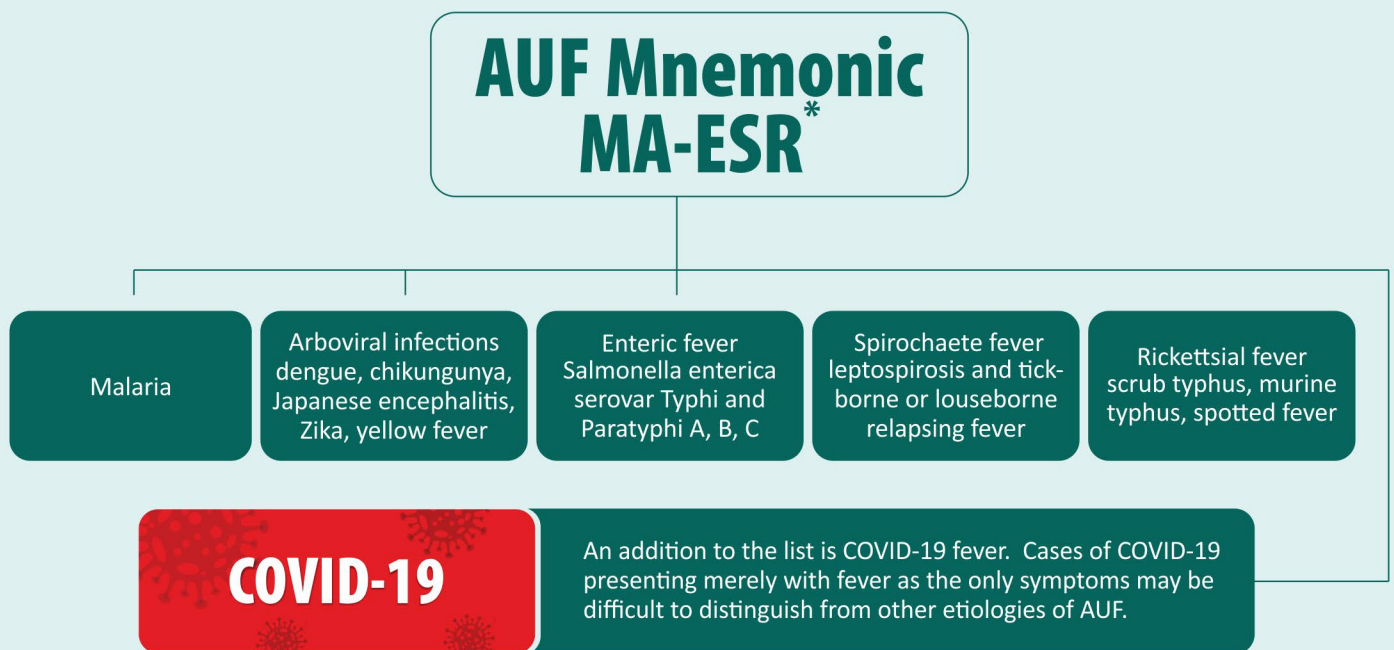


# Differential Diagnosis of Acute Undifferentiated Fever (AUF) in COVID-19

Acute Undifferentiated Fever (AUF) is defined as fever of less than two weeks' duration without organ-specific symptoms at the onset.<sup>1</sup> Non-specific symptoms like headache, chills, and myalgia are observed at onset of the illness. The entity itself poses a diagnostic and therapeutic challenge to the clinicians. The non-specificity of symptoms and signs with lack of availability of accurate diagnostics tests the clinical mettle and often leads to irrational use of antimicrobials.<sup>2</sup> Figure 1 presents the mnemonic 'MA-ESR' as an aid to recall the common AUFs.<sup>1,3</sup>



Fever, rash and lymphadenopathy are common symptoms of AUF as well as COVID-19. Overlapping clinical pictures and co-epidemics of COVID-19 with malaria or dengue have been a matter for concern. Diagnosis of many etiologies of AUF can be established with help of simple tests, such as peripheral smear examination or rapid diagnostic tests (RDTs) for malaria or dengue. A step-by-step algorithm (Figure 2) helps in differentiating various etiologies of AUF and thus, in early diagnosis and treatment.

\*MA-ESR- Malaria, Arboviral infections, Enteric fever, Spirochaete infections, Rickettsial infections

Figure 2: **Step-by-step algorithm to diagnose and manage AUF**<sup>1,3</sup>

## Step 1



### Assess severity of symptoms

History and a focused physical examination to quickly assess the severity of disease and to rule out sepsis

## Step 2



### History and clinical examination to assess for localization of fever

Fever-rash syndrome, fever-jaundice syndrome, fever-altered syndrome, and fever-arthralgia syndrome can help physicians fine tune their differential diagnosis; non-specific elevation in liver aminotransferases (ALT and AST); onset, duration and course of fever, key rule-in and rule-out features, and characteristic pattern of organ involvement

## Step 3



### Use of tests for early diagnosis

**Rapid diagnostic test for Malaria**  
**NS-1 antigen test for Dengue**  
**RT-PCR for COVID-19**

**Chest X-ray screening for all patients with AUF;**  
**for screening of lung pathology**

## Step 4



### Management of fever if less than three days in duration and initial RDTs are negative

Antipyretics initially as a supportive therapy

## Step 5



### Investigations and management if fever persists for longer duration and initial RDTs

Specific investigations such as serologic tests, blood cultures, polymerase chain reaction (PCR) assays are often ordered for evaluating fevers. Give empirical antibiotics

## Step 6



### Acute undifferentiated fever with negative culture that persists despite initial empiric antibiotics

Half the patients with AUF remain undiagnosed AUF is likely to resolve in more than **95%** instances

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