



Faculty of Medicine  
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# Tropical Diseases

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## Outline

How to approach fever without source in  
Thai children



Typical/Atypical manifestation (case study)

Dengue viral  
infection

Chikungunya

Leptospirosis

Scrub typhus

Enteric fever

## How to approach Fever in Thai children

<p><b>ลักษณะอาการ</b></p> <p>Fever (patterns, high or low,)</p> <p>Organ specific symptoms and severity</p> <p>Treatment and response to the specific treatment</p>	<p><b>ความเสี่ยงต่อการติดเชื้อ/เสี่ยงต่อการเกิดโรครุนแรง</b></p> <p>Outbreak?, contact to index case?, <b>endemic area</b></p> <p>Host: Age, underlying diseases</p> <p>Immunity to diseases: hx of immunization, previous infection</p>
<p>DDx: viral, bacteria, rickettsia, protozoa</p>	
<p>Duration of fever</p> <p>-Acute (<math>\leq 7</math> days)</p> <p>-Subacute (8-14 days) <span style="border: 1px solid black; padding: 2px;">ติดตาม อาการ, อาการแสดง labs,</span></p> <p>-Prolonged fever <math>&gt; 2</math> wks</p> <p style="text-align: center;">การดำเนินโรค</p>	<p>แตกต่างกันตามโรคที่อยู่ใน DDX</p> <p>การทราบกลไกการเกิดโรคจะทำให้สามารถรักษาโรคได้</p> <p>ตาม pathophysiology</p> <p style="text-align: center;">กลไกการก่อโรค</p>

## Onset and pattern of fever

Abrupt onset: มาร.พ ใช้ $< 4$ วัน		Insidious onset มาร.พ ใช้ $> 4$ วัน	
ไข้สูงลอย	ไข้แกว่ง	ไข้สูงลอย	ไข้แกว่ง
dengue	leptospirosis	typhus	typhoid
chikungunya	influenzae		malaria
septicemia			

### Duration of fever in children with chikungunya, dengue, leptospirosis, scrub typhus, and typhoid fever

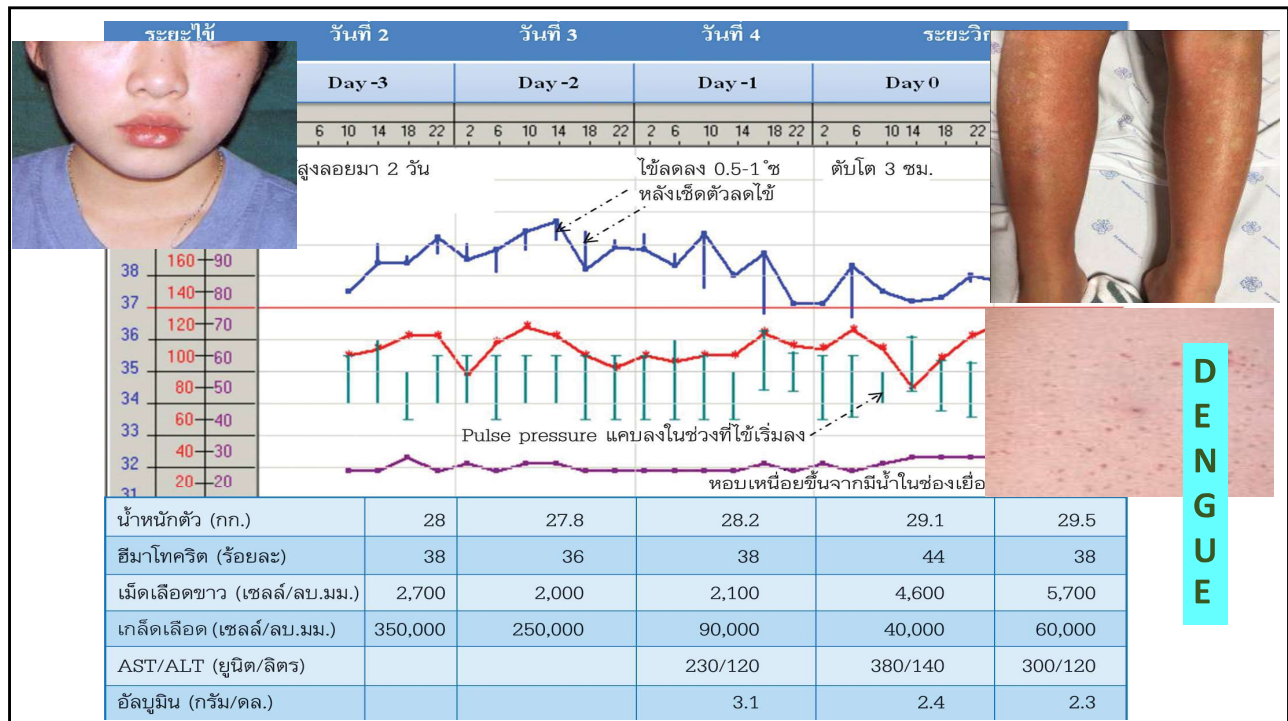
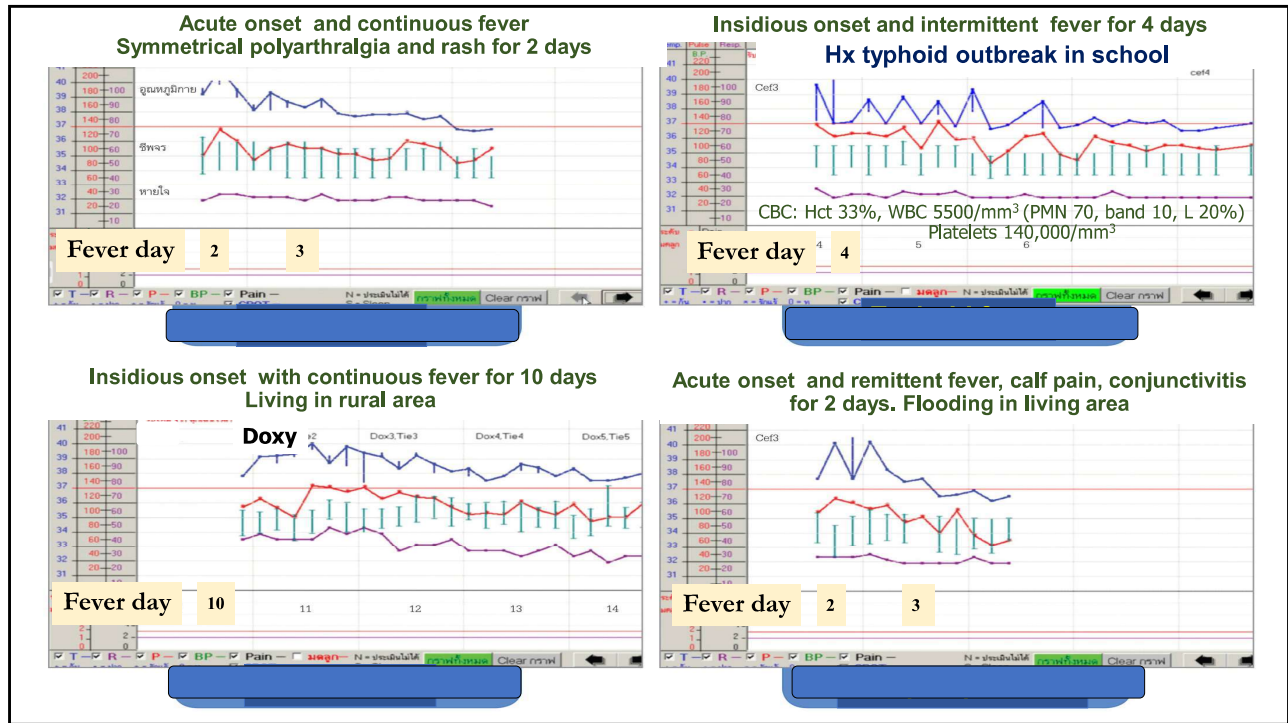
Disease	Duration of fever from 1 <sup>st</sup> day of fever to 1 <sup>st</sup> visit median (min-max)	Total duration of fever median (min-max)
Chikungunya (n=32) <sup>1</sup>	2 (1-4)	3 (2-6)
Dengue (n=90) <sup>2</sup>	2 (1-4)	5 (3-7)
Leptospirosis (n =20) <sup>2</sup>	2 (1-7)	6 (4-18)
Scrub typhus (n=20) <sup>2</sup>	7 (2-16)	11 (7-17)
Typhoid fever (n=368) <sup>3</sup>	5 (3-28*)	9 (3-35*)

\*1 case

1. Pediatr Infect Dis J 2012;31:459-63
2. Southeast Asian J Trop Med Public Health 2017;48:1274-80
3. PloS One 2014;9:e111768

### Typical manifestations





A 14-YO boy

Acute high fever for 4 days with shock  
Myalgia (calf pain, sub conjunctival  
hemorrhage)

Multi-organ involvement:

Pulmonary hemorrhage,  
Acute kidney injury (AKI)

Dx: Leptospirosis



เส้นน้ำคอง 11 วันก่อนมีไข้ (incubation period 1-30 days)  
มีเพื่อนที่ไปเล่นน้ำเป็น leptospirosis

## Leptospirosis: pulmonary hemorrhage, AKI

Collected 23/10/65 18:39		Sp. gravi 1.025 [ 1.003-1.030]		Received: 23/10/65 19:06	
Received 23/10/65 19:05		pH 5.5 [ 4.5-8.0]		Sample: Lit	
*CBC (+slide)		Leucocyte 1+ [ Negative]		Test Result [ Ref. units]	
WBC (L) 3.98 [ 4.5-10.0x10 <sup>3</sup> /u		Nitrite Neg [ Negative]		* BUN (H) 33.6 [ 8.9 - 20.6 m	
Hb (L) 6.8 [ 13.0-18.0g/dL]		Protein 3+ [ Negative]		* Creatinine (H) 2.46 [ 0.73-1.18 m	
Hct (L) 21.8 [ 40-54%]		Glucose 1+ [ Negative]		* Na+ 137.8 [ 136-145 mmol	
RBC (L) 3.25 [ 4.5-6.3x10 <sup>6</sup> /uL]		Ketone Neg [ Negative]		* K+ (L) 3.42 [ 3.5-4.5 mmol	
MCV (L) 67.1 [ 83.0-97.0fL]		Urobilino Normal [ Normal]		* Cl- 104.2 [ 98-107 mmol/	
MCH (L) 20.9 [ 27.0-33.0pg]		Bilirubin Neg [ Negative]		* Total CO2 (L) 17.3 [ 22-29 mmol/L	
MCHC 31.2 [ 31.0-35.0g/dL]		Blood 3+ [ Negative]		* Calcium (L) 7.9 [ 8.4-10.2 mg/	
PLT (L) 108 [ 150-450x10 <sup>3</sup> /uL]		Microscopic Examination Result		- Correct Calcium 9.0 [ mg/dL]	
RDW 15.0 [ 11.0-16.0%]		RBC 20-30/HP [ 0-3]		* Phosphorus 4.3 [ 2.3-4.7 mg/d	
PMN (H) 86 [ 40-70 %]		WBC 30-50/HP [ 0-5]		* D.bilirubin (H) 0.53 [ 0-0.5 mg/d	
Band 5 [ 0-5 %]				* T.Bilirubin 0.72 [ 0.2-1.2 mg/d	
Lymp (L) 4 [ 20-50 %]				* AST 32 [ 5-34 U/L]	
Mono 3 [ 2-10 %]				* ALT 18 [ 0-55 U/L]	
Atypl 2 [ 0-4 %]				* ALP 90 [ <500 U/L]	
Plt.smear Slightly Decrease					