

# Three patients with fever and rash after a stay in Morocco: infection with *Rickettsia conorii*

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- *Rickettsia conorii*
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# *Rickettsia conorii* – Mediterranean spotted fever

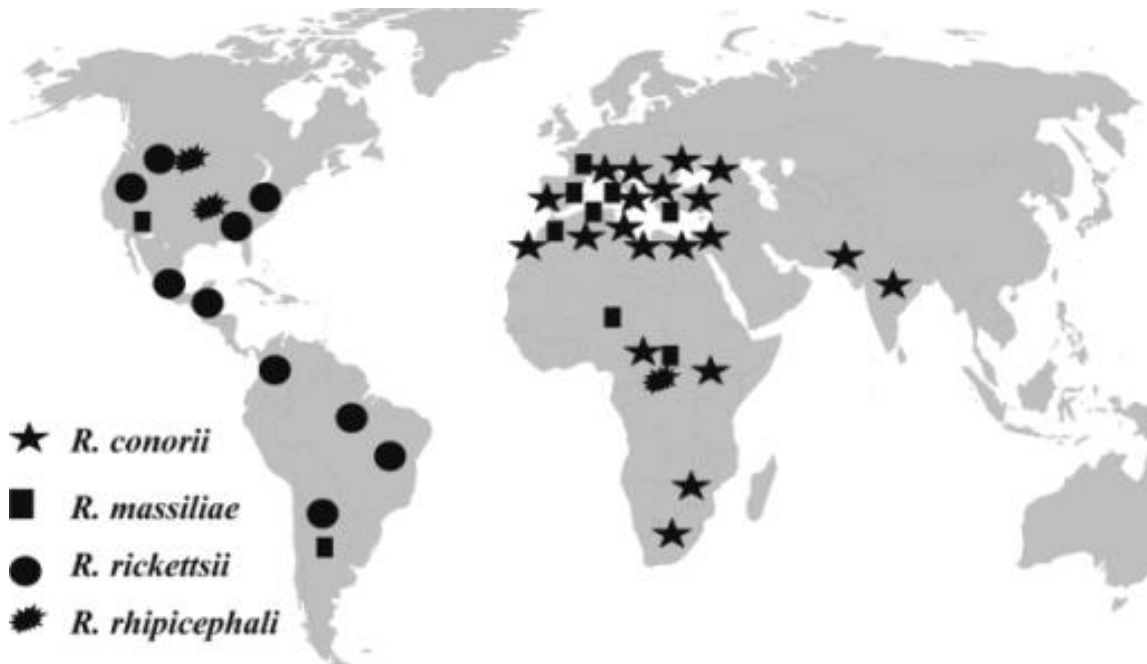
- *Rickettsia spp.* – spotted fever group
- 4 different subtypes
  - *R. conorii*
  - *R. conorii caspia*
  - *R. conorii israelensis*
  - *R. conorii indica*
- *Rhipicephalus sanguineus*: brown dog tick



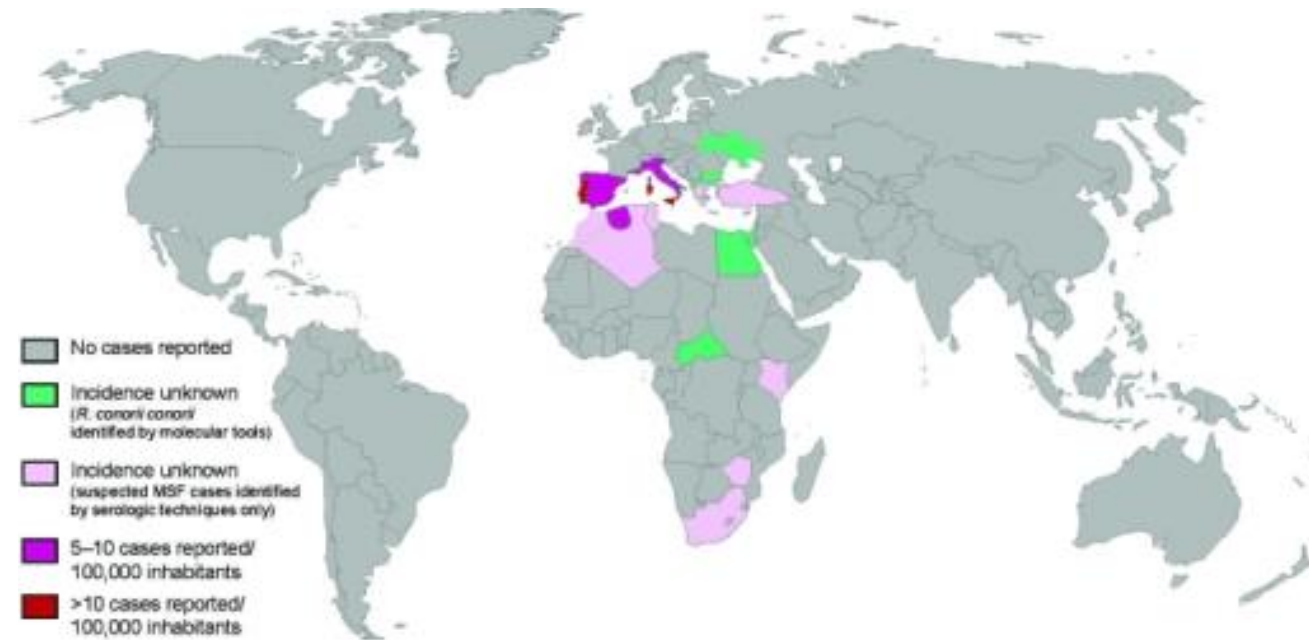
Champman AS et al.  
MMWR Recomm Rep  
2006; 55 (RR-4):1.

# *Rickettsia conorii* – epidemiology

## *Rickettsia species*



## *Rickettsia conorii*



# Case 1

- 62 year old male
- Hypercholesterolemia: R/simvastatin 20 mg
- Recent 4 week stay in Morocco (july – august 2016)
- Symptomatology:
  - black necrotic scabbed skin lesion
  - generalized myalgia and fever (39,5°C)
  - generalized maculopapular rash



# Case 1: tache noire



# Case 1: maculopapular rash



# Symptomatology of *Rickettsia conorii*

- Incubation time: 5–7 days → acute onset
- Fever (94–100%)
- Rash (87–96%): maculopapular or petechial
- Flu-like symptoms (78%)
- Tache noire (53–77%)

Parola P et al. Update on tick-borne rickettsioses around the world: a geographic approach. Clin Microbiol Rev 2013, 26(4):657–702.



# Case 1: lab results (1)

Parameter	Value	SI
Sodium	127	mmol/L
Chloride	92	mmol/L
CRP	61,6	mg/dl
LDH	657	U/L
AST	86	U/L
ALT	98	U/L
AP	131	U/L
$\gamma$ GT	488	U/L
Thrombocytes	152	/mm <sup>3</sup>
White blood cells	7,1	X 10 <sup>3</sup> /mm <sup>3</sup>

# Case 1: lab results (2)

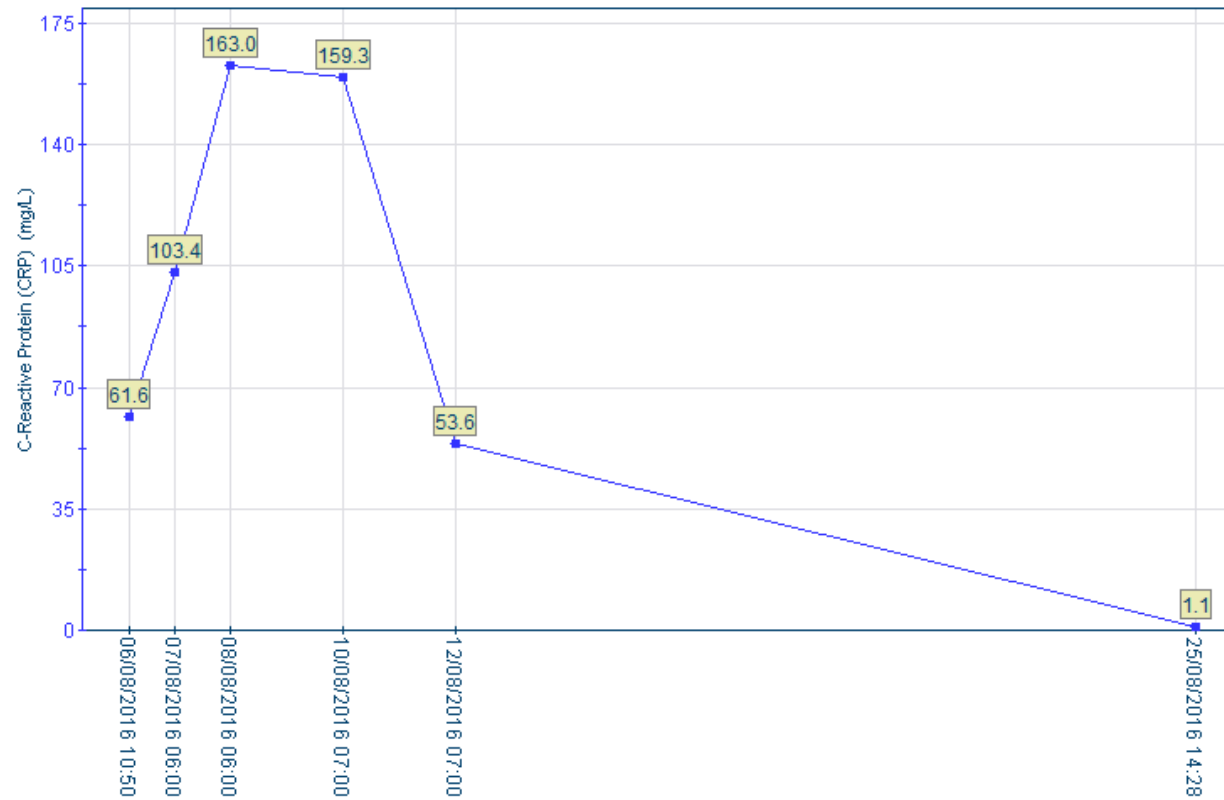
- Negative blood cultures
- Serology:

Micro-organism	IgM	IgG
Hepatitis A virus	-	+
Hepatitis C virus	-	+
EBV - CMV	-	+
<i>Rickettsia conorii</i>		1/512

- Biopsy tache noire: positive PCR for *Rickettsia conorii*

# Case 1: treatment

- Doxycycline 200mg/d



# Case 2

- 66 year old male
- Medical history:
  - diabetes mellitus type 2: R/metformin
  - gastritis: R/pantoprazol
  - splenectomy (post trauma)
  - appendectomy
  - osteosynthesis left shoulder
- Recent stay for 4 months in Morocco (May – August 2016)



# Case 2

- Symptomatology
  - fever (39,5°C)
  - headache
  - generalized myalgia
  - R/amoxicillin–clavulanate 2 days → maculopapular rash
- Initial differential at E.D.:
  - meningitis– encephalitis
  - pneumococcal sepsis
  - Mediterranean spotted fever

# Case 2: lab results (1)

Parameter	Value	SI
Sodium	132	mmol/L
Chloride	94	mmol/L
CRP	241,8	mg/dl
LDH	806	U/L
AST	92	U/L
ALT	49	U/L
AP	118	U/L
$\gamma$ GT	147	U/L
Thrombocytes	117	/mm <sup>3</sup>
White blood cells	10,5	X 10 <sup>3</sup> /mm <sup>3</sup>

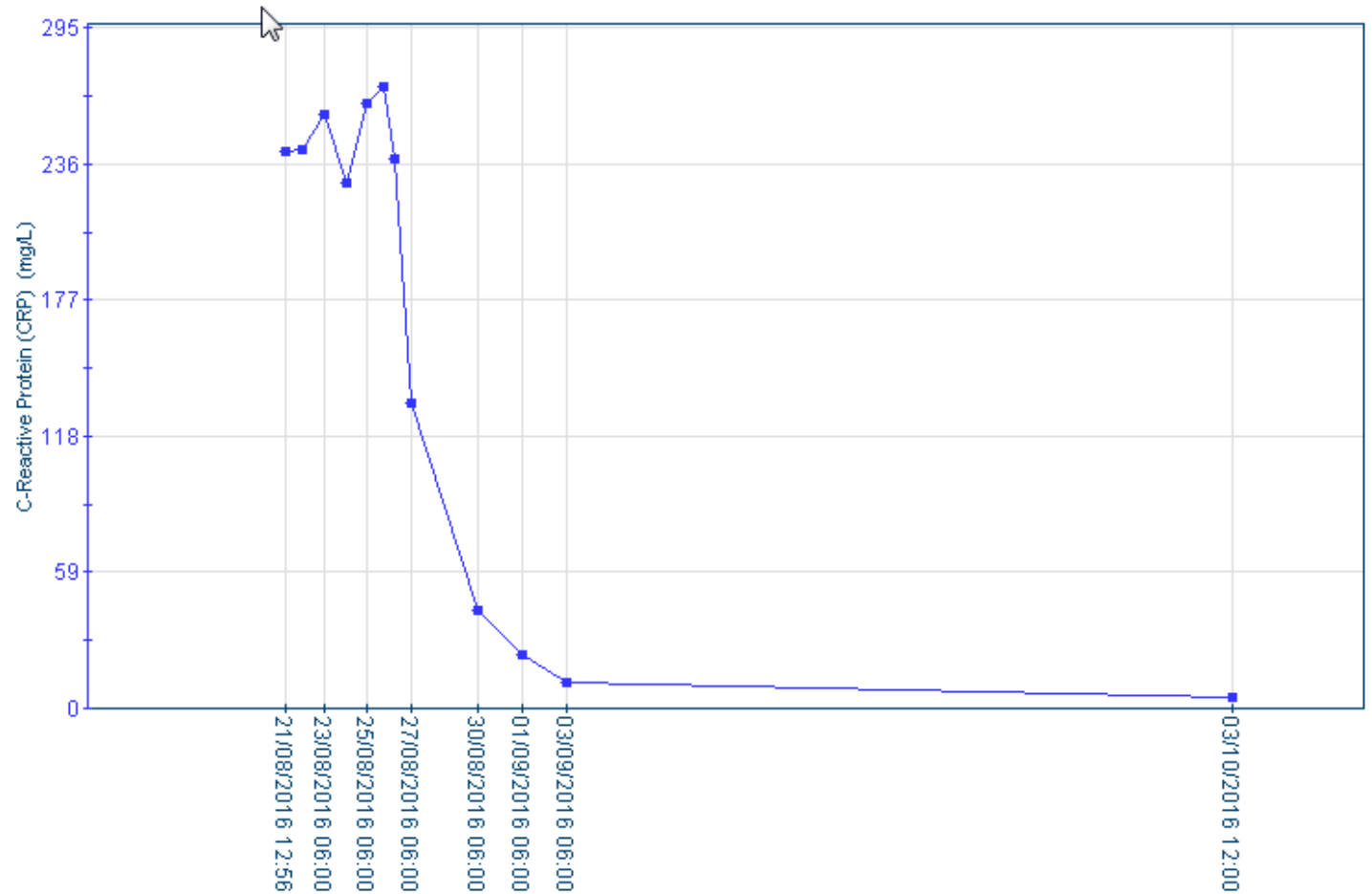
## Case 2: lab results (2)

- Normal CSF analysis
- Normal CT brain
- CT thorax: COPD configuration, chronic bronchitis
- Negative blood cultures
- Serology:

Micro-organism	IgM	IgG
EBV - CMV	-	+
<i>Rickettsia conorii</i>		1/512
<i>Rickettsia conorii</i> (1m)		1/8192

# Case 2: treatment

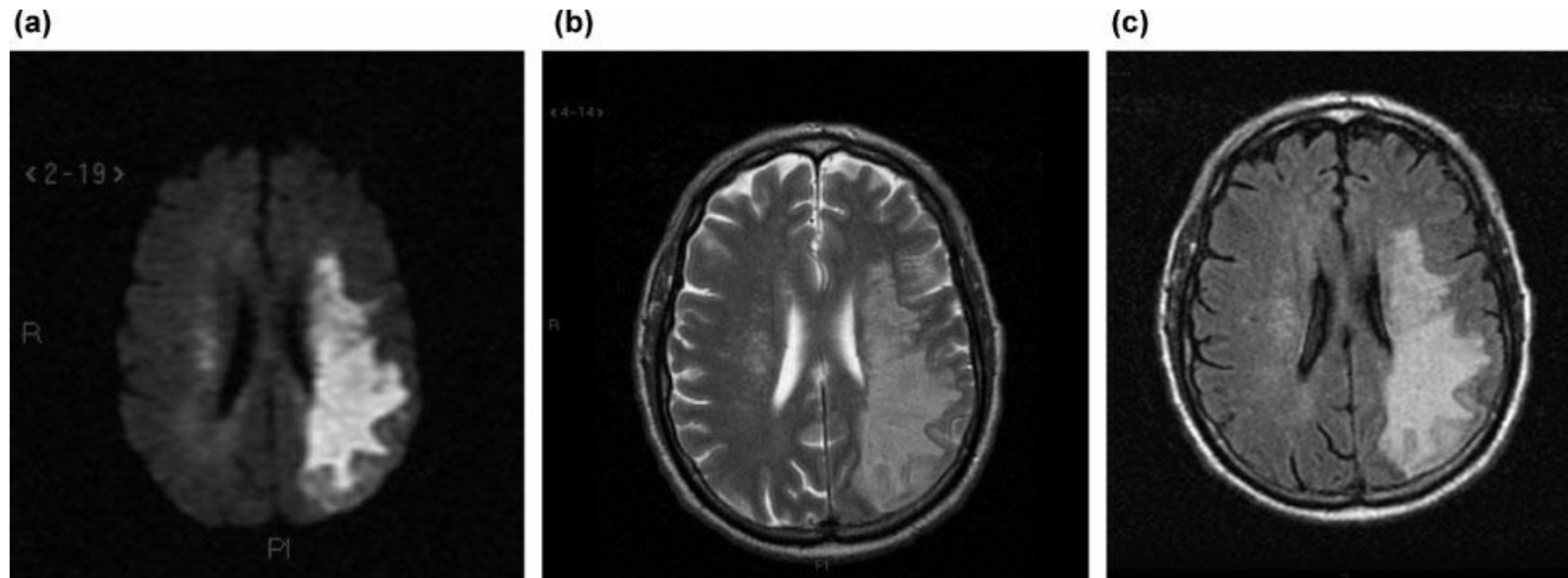
- Initially ceftriaxone IV
- After 2 days:  
doxycycline 200 mg/d





# Meningoencephalitis in MSF

- Case reports: meningitis–encephalitis–myelitis

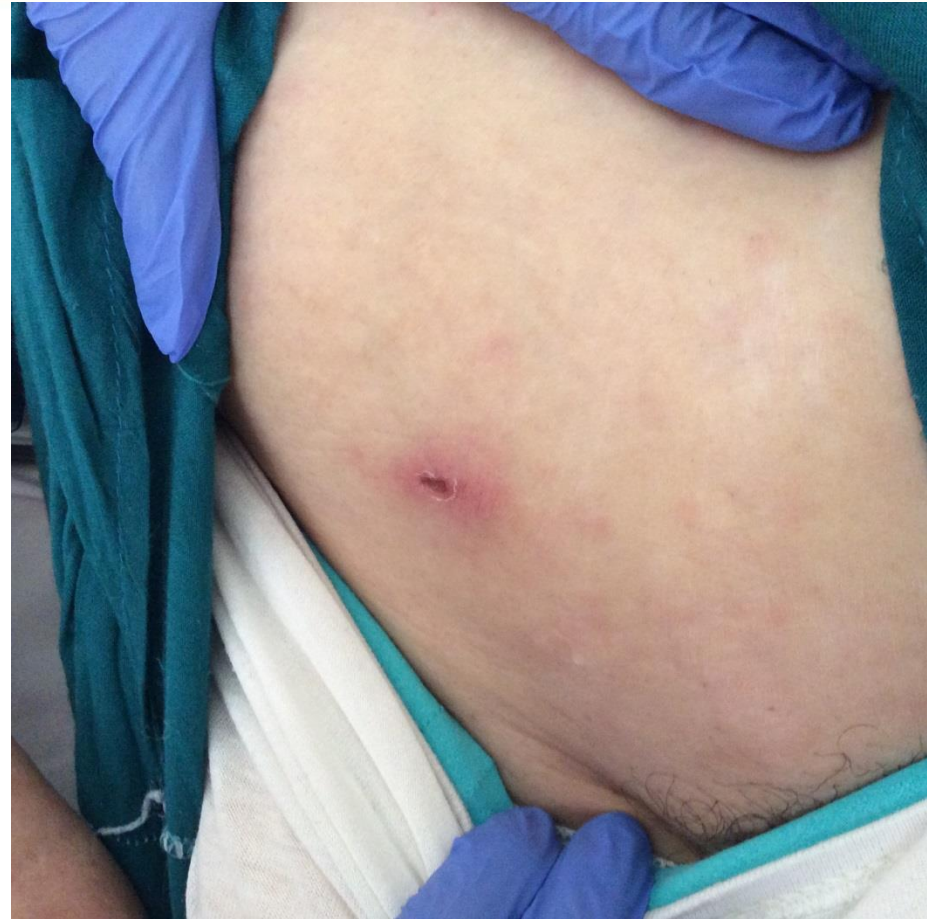
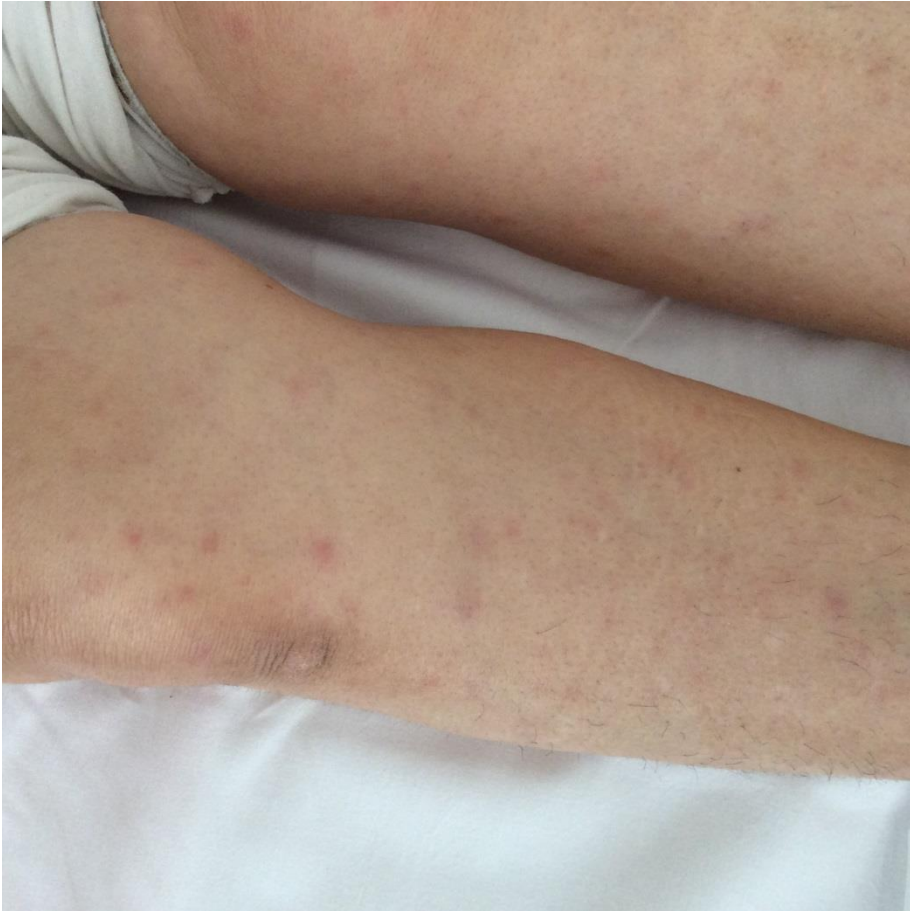


Aliaga L et al. Mediterranean spotted fever with encephalitis. *J Med Microbiol* 2009; 58 (4): 521–525.

# Case 3

- 59 year old woman
- Diabetes mellitus type 2: R/metformin
- Recent stay in Morocco (May – July 2016)
- Symptomatology:
  - fever – generalized myalgia (present in Morocco since 4 days)
  - maculopapular rash

# Rash and tache noire



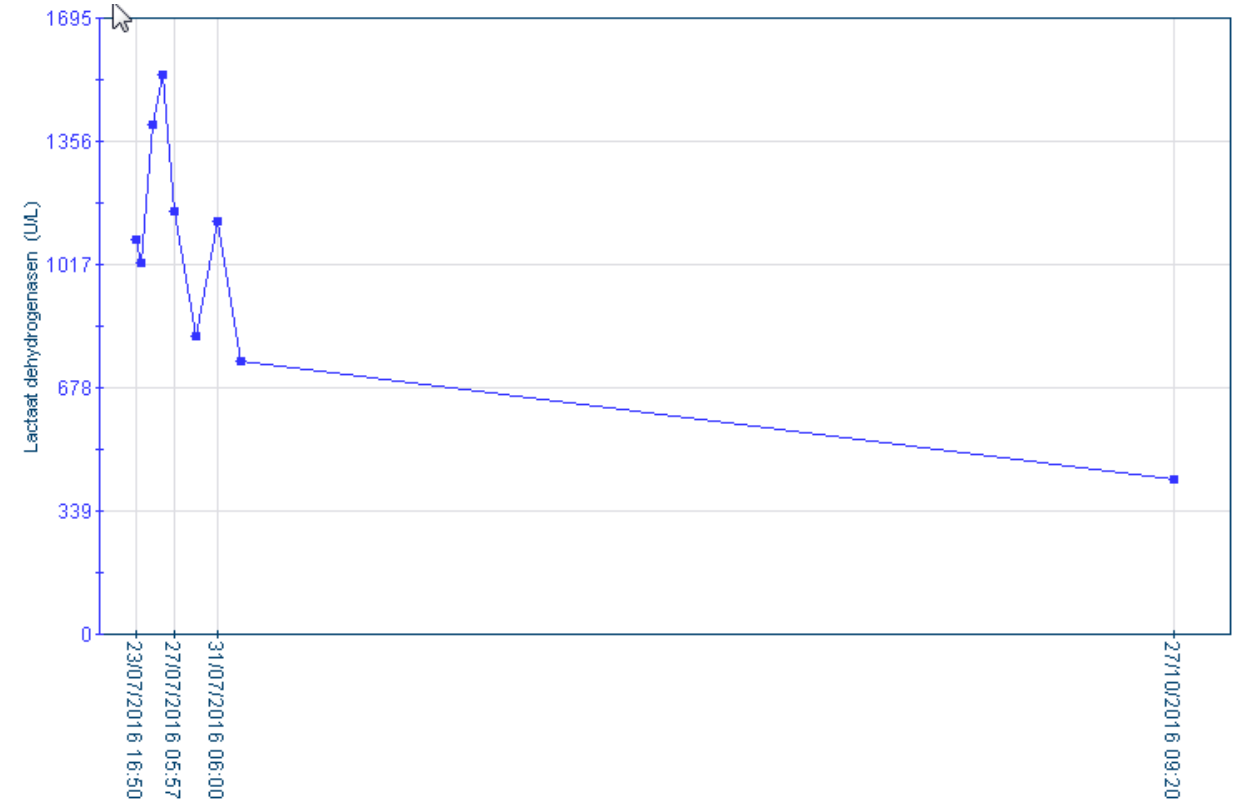
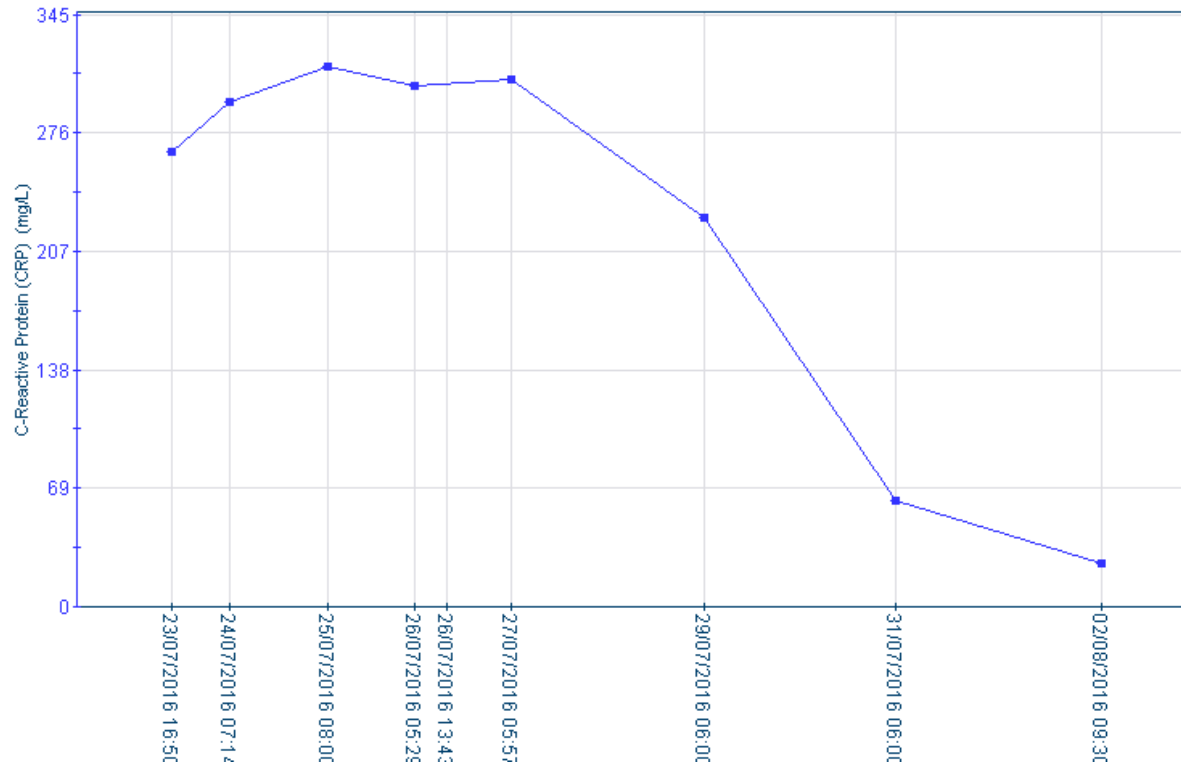
# Case 3: lab results

Parameter	Value	SI
Sodium	131	mmol/L
Chloride	92	mmol/L
CRP	264,7	mg/dl
LDH	1087	U/L
AST	127	U/L
ALT	169	U/L
AP	80	U/L
$\gamma$ GT	63	U/L
Thrombocytes	155	/mm <sup>3</sup>
White blood cells	5,0	X 10 <sup>3</sup> /mm <sup>3</sup>

# Case 3: treatment

- R/amoxicillin–clavulanate (empirically)
- After physical examination at internal medicine ward switched to doxycyclin 200mg/d
- Serology *R. conorii* initially negative
- Control sample running

# Case 3: evolution CRP – AST



# Conclusion and take home messages

- Include Mediterranean spotted fever
  - fever
  - maculopapular rash
  - recent stay in endemic region
- Tache noire = pathognomonic
- Serology + PCR biopsy
- Treatment of choice : doxycycline

# Questions and answers

Thank you all for listening.

Questions?



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- Aliaga L et al. Mediterranean spotted fever with encephalitis. *J Med Microbiol* 2009; 58 (4): 521–525.
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