

## How Severe Are Rickettsial Infections Among Children

Fatma Hammami, Makram Koubaa, Amal Chakroun, Khaoula Rekik, Fatma Smaoui, Emna Elleuch, Chakib Marrakchi, Mounir Ben Jemaa  
Infectious Diseases Department, Hedi Chaker University Hospital, University of Sfax, Tunisia

### Background

Rickettsial infections (RI) usually mimic benign viral infection due to similarities in clinical symptoms. However, severe forms and complications have been reported with rickettsiosis. Children can be affected as well. We aimed to study the particularities of RI among children.

### Methods

We conducted a retrospective study including all patients aged  $\leq 18$  years hospitalized for RI between 2000 and 2018. The diagnosis was confirmed by serologies (seroconversion).

### Results

In total, we encountered 59 children with confirmed RI, among whom 47 were male (79.7%). The mean age was 14.3 years. Early children had a close contact with animals (71.2%). All patients consulted for a febrile maculopapular skin rash which was associated for headache in 43 cases (72.7%), vomiting in 28 cases (47.4%) and cough in 8 cases (13.5%). Physical examination revealed an eschar in 13 cases (22%) and meningeal signs in 11 cases (18.6%). Laboratory investigations showed thrombocytopenia (27 cases: 45.7%) and liver cytolytic (23 cases: 38.9%). Severe forms of RI were represented by meningitis in 11 cases (18.6%), pneumonia in 2 cases (3.3%) and myocarditis in one case (1.6%). The treatment was based on doxycycline in 42 cases (71.2%), fluoroquinolones in 10 cases (17%) and macrolide in 7 cases (11.8%) for children aged  $\leq 8$  years. The mean duration of treatment was 8.43 days. The disease evolution was favourable in all cases.

### Conclusion

The diagnosis of RI among children should be largely based on high index of suspicion, careful clinical and laboratory results. Prompt diagnosis is crucial in order to start antibiotics and avoid therefore fatal untreated forms.

### Background

Rickettsial infections usually mimic benign viral infection due to similarities in clinical symptoms. However, severe forms and complications have been reported with rickettsiosis. Children can be affected as well. We aimed to study the particularities of rickettsial infections among children.

### Methods

We conducted a retrospective study including all patients aged  $\leq 18$  years hospitalized for rickettsial infections between 2000 and 2018. The diagnosis was confirmed by serologies (seroconversion).

### Results

- **Total:** 59 children
- **Gender:** 45 males: 76.3%
- **Mean age:** 14  $\pm$  3 years.
- **Close contact with animals:** 40 children: 71.4%.
- **Revealing symptoms:** Febrile maculopapular skin rash was noted in all cases (Table 1).

**Table 1: The revealing symptoms of cases of rickettsial infections among children**

	Number	Percentage (%)
Febrile maculopapular skin rash	59	100
Headache	45	76.3
Vomiting	28	47.4
Cough	8	13.5

### • Physical examination:

- ▶ Eschar: 13 cases: 22%
- ▶ Meningeal syndrome: 11 cases: 18.6%.

- **Severe forms of rickettsial infections:** meningitis was noted in 18.6% of the cases (Table 2)

**Table 2: Severe forms of rickettsial infections among children**

	Number	Percentage (%)
Meningitis	11	18.6
Pneumonia	2	3.3
Myocarditis	1	1.6

### • Laboratory investigations:

- ▶ Thrombocytopenia: 31 cases: 52.5%
- ▶ Liver cytolytic: 26 cases: 44%.

- **Treatment prescribed:** Doxycycline was prescribed in 71.2% of the cases (Table 3)

**Table 3: Treatment prescribed for rickettsial infections among children**

	Number	Percentage (%)
Doxycycline	42	71.2
Fluoroquinolones	10	17
Macrolide*	7	11.8

\*: for children aged less than 8 years

- **The mean duration of antibiotics:** 8  $\pm$  4 days.
- **Disease evolution:** Favourable in all cases

### Conclusion

The diagnosis of rickettsial infections among children should be largely based on high index of suspicion, careful clinical and laboratory results. Prompt diagnosis is crucial in order to start antibiotics and avoid, therefore, fatal untreated forms.