



Hillel Yaffe
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Acute Q fever in Israel: Clinical and Demographic Data 2006-2016

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Background

- The clinical spectrum of acute Q fever varies around the world
- Israel is endemic for Q fever
- The aim of our study was to describe the clinical characteristic of acute Q fever in hospitalized patients in our area, and to evaluate whether a single positive IgM phase 2 is sufficient for diagnosis

Methods

- A historical cohort, including adult patients with a serologic diagnosis of acute Q fever, that were hospitalized in our medical center between 2006-2016
- We compared patients with a definitive diagnosis of an acute disease (phase 2 IgG \geq 200 and IgM \geq 50 or a 4 fold rise or seroconversion of phase 2 IgG) to patients with indefinite diagnosis (at least phase 2 IgM \geq 50)
- We calculated the sensitivity and specificity of a positive IgM phase 2 for a definitive diagnosis

Results

- 3352 blood samples from our medical center were tested, and 205 (6.1%) were positive for phase 2 IgG or IgM
- Full data was available for 152 patients, 6 patients were excluded due to chronic infection, and data was analyzed for 146 patients

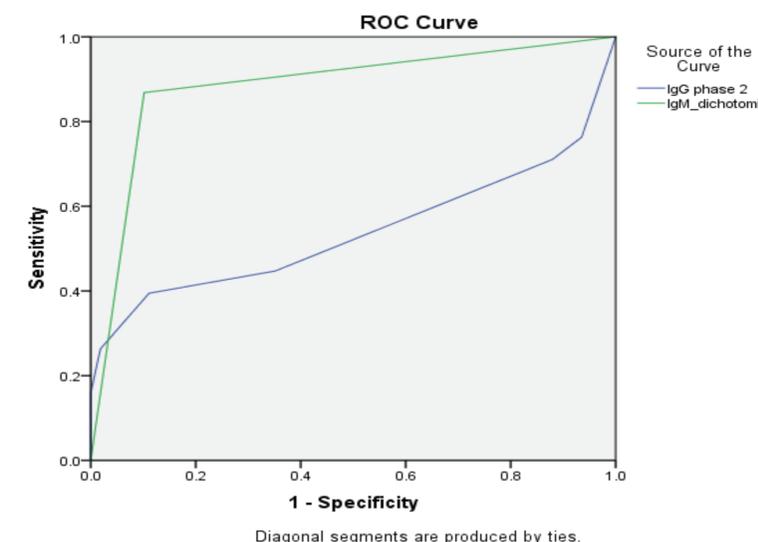
- 38 patients met criteria for a definite diagnosis and were compared to 108 with indefinite diagnosis (see table)

Table: Demographic, clinical and laboratory data of patients with acute Q fever

	Definitive diagnosis (n=38)	Indefinite diagnosis (n=108)	P value
Age, years –median (range)	52 (19-81)	45 (18-86)	0.137
Gender - female	48%	34%	0.25
Ethnicity - Arab	8%	24%	0.034
Season – fall and winter	47%	29%	0.036
Duration of symptoms, days – median (range)	7 (1-30)	4 (1-30)	0.317
Fever	97%	72%	0.001
Respiratory complaints	37%	44%	0.447
Anemia	29%	31%	0.853
Leukopenia	13%	4%	0.052
Thrombocytopenia	16%	15%	0.885
Elevated liver enzymes	26%	16%	0.156
Infiltrate on X-ray	45%	27%	0.04

- In multivariate logistic regression, only fever and pneumonia were predictors of a definite diagnosis
- The positive predictive value of IgM phase 2 \geq 50 was 93% and negative predictive value was 81% (see figure)
- The specificity and sensitivity of elevated IgG phase 2 were lower, and dependent on IgG titers

Figure: sensitivity and specificity of positive phase 2 IgM or IgG for acute Q fever



Conclusions

- Our patients with acute Q fever had less hepatitis and thrombocytopenia than reported worldwide
- A single positive IgM phase 2 is sufficient for diagnosis of an acute disease in most of the patients
- In patients with risk factors for a chronic disease, we recommend paired sera for a definitive diagnosis