

# ACUTE Q FEVER IN PREGNANCY – EPIDEMIOLOGY, IMPLICATIONS AND MANAGEMENT

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## Description of Case

A 22 year old female was taken to her local hospital after a motor vehicle accident. She was G1P0 at 28 weeks gestation. She gave a history of being unwell for the previous three days with fevers, sweats, myalgias, headaches, moist cough, and nausea with vomiting. Her injuries consisted of seatbelt related chest wall bruising and a fractured right first metacarpal. There was no head injury, abdominal pain or vaginal bleeding. She was transferred to tertiary referral centre for obstetric and orthopaedic review. Foetal ultrasound confirmed a healthy foetus and no signs of placental abruption. Cardiotocography was normal. Review of her pathology revealed mildly elevated transaminases, hypoalbuminaemia, and mild thrombocytopenia. Further history revealed risk factors for zoonotic infection. Subsequent serological testing was consistent with acute Q fever. Review of the literature suggested cotrimoxazole as the treatment of choice. The patient was commenced on this agent and went on to deliver a healthy term infant. Coxiella DNA was detectable in placental tissue by PCR, but not detectable in breast milk. Follow-up serological testing has revealed falling Phase I titres and the patient and her infant remain well.

## Key Questions for Discussion

How prevalent is acute Q fever in pregnancy?  
What are the implications for the mother and the pregnancy?  
How should acute Q fever in pregnancy be treated?  
What follow-up is required?  
Are birthing suite staff and the neonate at risk?

## Relevant Literature Review

Q fever is worldwide zoonosis due to *Coxiella burnetii*, an obligate intracellular bacterium that replicates in acidic phagolysosomes. Both acute and chronic infection in female animals is associated with abortion, prematurity, low birth weight and infertility. The mechanisms for this include placentitis and immune complex formation, resulting in vascular thrombosis and placental insufficiency, and direct transplacental foetal infection. Acute Q fever in human pregnancy was first reported in 1953. Acute infection in pregnancy is probably under-recognised in endemic areas. In one epidemiological series, eleven of 379 women (2.6%) were found to have a serological profile consistent with acute infection. Adverse pregnancy outcomes are frequent, occurring in up to 81% of untreated patients. Reported outcomes include spontaneous abortion, intra-uterine foetal death, premature delivery, oligoamnios, and intra-uterine growth retardation. The most important factors determining outcome appear to be gestational age at the time of infection, and the provision of effective treatment. First trimester infections have a much higher risk of pregnancy loss than second and third trimester infections. Treatment has been shown to lower the risk of pregnancy loss regardless of gestational age at the time of infection. Cotrimoxazole (trimethoprim 320mg / sulfamethoxazole 1600mg daily) has been found to be safe and effective, and is recommended from diagnosis until term. Up to 50% of women who acquire Q fever in pregnancy will develop a serological profile consistent with chronic infection. All patients should be followed serologically for a minimum of 24 months, and should undergo transthoracic echocardiography to exclude valvular heart disease, which is a major risk factor for the development of chronic Q fever. Those patients with persisting Phase 1 IgG titres  $\geq$  800 should undergo transoesophageal echocardiography and polymerase chain reaction on serum to detect early endocarditis. Health care workers present during the delivery of infants born to infected mothers need to be aware of the potential for transmission of infection via aerosolised amniotic fluid. There is also the potential for transmission of infection to the infant, not only via amniotic fluid exposure, but also via breastfeeding, as the presence of *Coxiella* has been demonstrated in human breast milk by several authors. Little is known about the frequency and significance of congenital Q fever. All infants born to exposed mothers should therefore be followed up closely.

**Key References**

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