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Pregnancy Complicated by Q fever

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Mini Review

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Abstract

Q fever r is a zoonosis caused by Coxiella burnetii which is highly contagious.

Little is known about acquisition of Q fever during pregnancy, yet, it is known to be associated with severe maternal and fetal morbidity and mortality.

We present a case of 2nd trimester pregnant who was diagnosed with Q fever during workup for fever of unknown origin. We will discuss diagnosis treatment and labor management.

Keywords: Q fever; Pregnant; Zoonosis; Peripartum; Clotrimazole

Introduction

Q fever is a zoonosis caused by the bacteria Coxiella burnetiI and can cause infection in humans [1]. The main reservoir of the causative bacteria is in cattle, sheep, goats and cats. Human Infection is possible by contact with the causative bacteria that is found in milk, secretions and products of conception (mainly placenta). Q fever usually presents in human as an asymptomatic infection or an unspecific symptoms and signs such as fever, respiratory symptoms, liver involvement and muscle pain. Little is known about the influence of Q fever on pregnancy and the recommended treatment and management during pregnancy and labor. The know data suggests increased risk for spontaneous abortion, intrauterine fetal demise, preterm labor and intrauterine growth retardation [2-4].

Review

Q fever is a zoonosis caused by the bacteria Coxiella burnetiI, it is an intracellular rod that related in the past to the rickettsia family and today related to the protobacteria family. Macrophage is the host cell in humans. When the bacteria expresses the phase 1 antigen, the bacteria is extremely contagious and a single bacteria is enough as an inoculum to cause efficient infection. After intracellular replication, the bacteria undergo changes in the lipopolysaccharide envelope and express the phase 2 antigen. Which is no longer contagious?

The main reservoir is found in ticks and the main source of infection to humans is house hold and farm animals. Infected mammals secrete the bacteria in urine, feces, milk and in conception fluids. Human infection occurs while inhaling fluid particles that contain the bacteria.

The incubation period is 20 days long and clinical manifestation varies between flu-like symptoms, pneumonia or hepatitis and can take the form of pericarditis or meningitis. Up to 20% of cases will proceed to chronic infection, these cases are usually immunocompromised, pregnant or carriers of prosthetic organs.

The bacteria can't be cultured on regular Agar, and there is a need for different techniques such as PCR or serology antigens testing. Diagnosis of acute infection is made by identification of IgG antibodies of the phase 2 type > 200 or IgM > 50. Yet another method for diagnosis is 4-fold increase in IgG antibodies from the phase 2 type in a period of 6 weeks. Phase 1 IgG antibodies > 800 is a known sign of chronic infection. Mostly, serological changes occur 1-2 weeks after appearance of symptoms [5].

In pregnant, infection is usually asymptomatic, but the risk for chronic infection is increased markedly. In addition, q fever carries noticeable maternal and fetal complications such as spontaneous abortion in 26%, intrauterine fetal demise in 5.3%, preterm delivery 44.7% and intrauterine growth retardation in 5,3% of cases [2]. The peripartum and postpartum period is highly contagious and there is a marked difficulty to avoid environmental exposure to the bacteria [6]. Recommended treatment in pregnant is Clotrimazole and treatment should be continued up to 8th month in order to reduce risk for placental infection, obstetrical complications and chronic infections.

In a retrospective study of 53 pregnant infected with Q fever, it was found that 1st trimester infection is associated with higher rates of complications and chronic infection as compared to acquisition of the bacteria during 3rd trimester. Moreover, it was found that placental infection itself was associated with obstetrical complication such as intrauterine fetal demise. Treatment with Clotrimazole was shown to reduce risk for chronic infection, placental infection and obstetrical complications, especially intrauterine fetal demise [4].

Conclusion

To pregnant, Q fever is a worrisome infection that carries risk for poor maternal and obstetrical outcome. Obstetrical complications are more common when infection acquired early in pregnancy. Diagnosis isn't made easily and high degree of suspicion should be kept when evaluation pregnant with fever of unknown source or respiratory symptoms. A special consideration should be given for appropriate anamnesis and relation to risk factors. Recommended treatment is Clotrimazole and it is proved to reduce intrauterine fetal demise and progression of infection to the chronic state. All pregnant infected with Q fever should be treated with Clotrimazole. Induction of labor at 38th week should be considered due to placental complications and increased risk for intrauterine fetal demise. Cesarean delivery should be considered in the accepted indications as any other delivery. A proper precocious should be undertaken to reduce exposure during peripartum and post-partum period.

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