

Detection the Role of *Coxiella burnetii* in Abortion of Women in the Thi - Qar Province-Iraq.

الكشف عن دور بكتريا الكوكسيلا بورنتي في حالات الاجهاض في النساء في محافظة ذي قار- العراق

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الخلاصة

بكتريا الكوكسيلا بورنتي، داخل خلوي اجباري واسع الانتشار في العالم، هي العامل المسبب للحمى المجهولة في الانسان. هذه الدراسة جمعت 40 عينة مصل الدم من النساء المجهضة في مستشفى بنت الهدى جنوب العراق. بواسطة فحص الاليزا استهدف الكلوبولين المناعي المضاد للجراثومة في عينات المصل. شخصت جراثومة الكوكزيلا في 8 (20%) عينات و 6 (15%) عينات كانت مشتبه بها للأجسام المضادة. وكان تكرار التشخيص مترافق مع حالات املاص الجنين. هذه الدراسة الاولى على هذه البكتريا التي بقيت غير مشخصة كعامل مسبب للإجهاض و غير مدروسة الانتشار في العراق. الدراسة الحالية بينت الانتشار الواسع بكتريا الكوكسيلا بورنتي في النساء المجهضة، لذلك فان الحمة الجهولة هي المسؤولة عن عدد من الاسقاطات النساء في العراق.

Summary

Coxiella burnetii bacteria, an obligate intracellular with a worldwide geographical distribution, are the causative agent of Q fever in humans. In this study a total of 40 serum samples collected from aborted women in Bent Al Huda hospital in southern of Iraq. By enzyme linked immunosorbent assay (ELISA) targeting immunoglobulin G antibody (IgG) of this bacterium in serum samples. The *C. burnetii* diagnosed in 8 (20 %) in clinical samples and 6 (15%) samples were equivocal to IgG antibody. And the frequent diagnose of immunoglobulin association

of the pathogen with cases of spontaneous abortion. These first studies on this bacterium which remain not diagnose as causative agents of abortion and that the prevalence in Iraq is non-studied.

The present study demonstrated the high prevalence of *Coxiella burnetii* in aborted woman. Therefore, Q fever could be responsible for considerable numbers of woman abortions in Iraq.

Key word: *Coxiella burnetii*, Abortion and Elisa.

Introduction

Q fever, belongs to a group of rickettsial infections, is an important zoonotic disease caused by the obligate intracellular gram-negative bacterium (*Coxiella burnetii*)(Marmion *et al.*,2005).The outbreak of Q fever occurs in Netherland in2007 has affected over 4000 person, (Roest *et al.*,2012).

In abortion, up to 10^9 C. burnetii cells per gram of placenta can be excreted. Considering the infective dose (ID) of this pathogen has been reported to be close to one, these products are obviously hazardous to human's health (Aidya *et al.*, 2008). In other study showed with an abortion, up to 1 billion C. burnetii per gram of placenta can be excreted. Also concentration of C. burnetii in veterinary matrices are found in birth materials, placentas and like amnion fluids (Masala *et al.*, 2004).

In humans acute Q fever is a flu-like illness, which is self-limiting or easily treated with antibiotics when an appropriate diagnosis is made. While in chronic Q fever is a severe disease that requires prolonged antibiotic therapy because the infection can result in granulomatous hepatitis and endocarditis. In addition, the *Coxiella burnetii* infection can causes abortions, stillbirth and pre-mature deliveries in pregnant women (Maurin and Raoult 1999).

Material and method

Samples

A total of 40 serum samples with cases abortion were collected from Bent Al huda hospital in northern Iraq. Collected blood samples were brought in ice-pack containers to laboratory.

IgG assay procedure

Assay procedure applicated according to kit manufactures.

Results

The objectives of this study were to determine the presence of *C. burnetii* in blood of aborted woman and this study is the first research in Iraq that detected of *C. burnetii* as causative agent of abortion in Nasyria city-Iraq

According to this study the abortion the occurs in different period of pregnancy stage in human.

Table 1 show the abortion percentage.

Abortion stage	Abortion case no.	Percentage
Spontaneous	25	62.5%
Seconded stage	8	20%
Third stage	2	5%
Stillbirth	5	12.5%
Total	40	100%

These results showed that IgG *Coxiella burnetii* antibody is found in serum of aborted women in percent 20% (8) and 6 (15%) samples were equivocal to IgG *Coxiella burnetii* antibody.

Table: 2 revealed *Coxiella burnetii* results

Results Sample	IgG +ve	percentage	IgG -ve	Percentage	IgG equivocal	percentage
Serum	8	20 %	26	65 %	6	15 %

Discussion

Many studies conducted in several areas confirmed that is widely geographical distributed in several countries and concluded that animals are important reservoirs of this bacteria. (Weir *et al.*,19984, Rahimi *et al.*,2010, Parisi *et al.*, 2006)

In human many disease occurs due to *Coxiella burnetii* infection such as acute flu-like illness, hepatitis, pneumonia and spontaneous abortion (Vaidya *et al.*, 2008, Musso and Raoul 1995). From a few years the large number of abortion case occurs in Iraq without detection of causes. This study, select immunoglobulin g (IgG) because of this bacteria cause spontaneous abortion in chronic coxiellosis (Musso and Raoul 1995) , showed the high prevalence of *Coxiella burnetii* in aborted woman and the high number of abortion cases associated with rural women cases (Lyytikainen *et al.*,1998, Javad *et al.*,2013). This result may be due to the direct contact with animal and their products. Animals that carry this organism and shed it into the environment usually do not show any signs of disease. The shedding of *C. burnetii* by animals is an important public health threat. Many research showed the identification of 60% of goats shedding *C. burnetii* into feces, vaginal mucus, and milk. Other studies especially in small ruminant seroprevalence of Q fever occurred in 23.8% and 40.8% in sheep and goats, respectively(Javad *et al.*,2013) In Iraq many cases of abortion occurs with unknown causative agent, this study detected of *Coxiella burnetii* as one of this agents.

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