

Circulating Agglutinin Profiles of Human Brucellosis at Babylon Province

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Abstract

The circulating agglutinin profiles were attempted as infection probe for human brucellosis at two capital hospital in Babylon province during December (1999) to May 2000. 2- mercaptoethanol (2-ME) sensitive humoral agglutinins (acute) and 2-ME resistant humoral agglutinins (chronic) were noted, thus acute and chronic brucellosis were noted, high incidence was noted among females (59.7 %). Likewise, adult infections dominate (52.3 %) those of children age (47.3%).

Introduction

Brucella causes zoonosis with most human infections occurring in livestock fawners and meat processors. (Johnson, 1996). Brucellosis (undulant fever, Malta fever) is characterized by an acute bacteremic phase followed by a chronic stage that may extend over many years and may involve many tissue (Brooks *et al.*, 1998).

Among the common bacterial infectious diseases at Babylon province is brucellosis (Shnawa and Hindi, 1995). Brucellosis has been common in other part of Iraq (AL-Shaarbaaf and Yahya, 1998). The aims of the present work were: -

- 1- Detection of chronic and acute stage of brucellosis.
- 2- Determination of *Brucella* circulating agglutinin profiles.
- 3- Detection of age-sex prevalence at Babylon Province.

Materials & Methods

Fifty-seven *Brucella* suspected (Williams, 1982; AL-Shaarbaaf and Yahya, 1998) patients were inpatient in gynecology and children sick hospital (GCH) and Merjan Hospital (MH). *Brucella* circulating agglutinins with and without 2-mercaptoethanol (2-ME) treatment (0.05 M) (Collee *et al.*, 1996) were tested.

Results

1- Serology:

In 36 out of 57 the *Brucella* agglutinin titers were reduced. While the rest were resistant, thus, two agglutinin profiles were noted (Table 1).

2- Infection forms:-

Acute and chronic brucellosis were noted in each of the two capital hospitals (Table 2).

3- Age- Sex prevalence:-

Adult brucellosis were of higher (52.4 %) prevalence than child brucellosis (47.3 %) female (59.7%) brucellosis dominated those of male (40.3%).

Discussion

The 2-ME resistant agglutinins may indicate an IgG humoral immune response (chronic) while those 2-ME sensitive agglutinins may express an IgM type humoral immune response (acute) (Brooks *et al.*, 1998;

Cruikshank *et al.*, 1975). Thus acute and chronic types of brucellosis were determined. Female and adulthood dominance of brucellosis have been documented in this area (Shnawa and Hindi, 1995).

On comparison of the results obtained in this work to that Shnawa and Hindi (1995) and Shaarbaf & Yahya (1998), one can conclude that Babylon area could be an area of alert beside northern and southern part of Iraq. Meantime it is a public health problem deserves control measures.

Table (1):- Patients Brucella specific circulating agglutinins:

Patient state	Circulating Agglutinin Titers		Percentages
	* B(2-ME)	** A(2-ME)	
Acute	160	80	9:57(15.8%)
	320	80	7:57(12.3%)
	320	160	17:57(30%)
	640	160	3:57(5.03%)
Chronic	160-640	160-640	21:57(36.6%)
Total			57:57(100%)

* B (2-ME) Before 2-ME treatment

** A (2-ME) After 2-ME treatment

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أنماط الملزئات الدوارة لداء البروسيلة البشري في محافظة بابل

الخلاصة

تم التحري عن وجود الملزئات الدوارة كمجسات للإصابة بداء البروسيلة البشري في اثنين من مستشفيات محافظة بابل للفترة من كانون الأول ١٩٩٩ ولغاية ايار ٢٠٠٠. لوحظ وجود الملزئات الدوارة لدرجة لمركب ثاني مركباتو ايثانول (الطور الحاد) وكذلك الملزئات الدوارة المقاومة لمركب ثاني مركباتو ايثانول (الطور المزمن). كان أعلى معدل للإصابات بين الإناث (٥٩,٧%) وكذلك لوحظ أعلى معدل بين البالغين (٥٢,٧%) مقارنة بالأطفال (٤٧,٣%).

Table (2):- Brucella circulating Agglutinin nature in the inpatients as Acute (A) and chronic (C) Brucellosis with age-sex prevalence						
	Hospital/Age Range percentages of Brucella circulating			Agglutinins		
	Male		Female		Total	
	C	A	C	A	C	A
6-14 (GCH)	6:13(46.1%)	6:13(5.38%)	3:14(21.4%)	11:14(78.5%)	9:27(33.3%)	18:27(66.67%)
16-65(NH).	6:10(60%)	4:10(40%)	6:20(30%)	14:20(70%)	12:30(40%)	18:30(60%)
Age-Prevalence	12:23(52.1%)	10:23(47.8%)	9:34(26.4%)	25:34(73.5%)	21:57(36.8%)	36:57(63.15%)
Childhood	27:57(47.3%)					
Adulthood	30:57(52.7%)					
Sex-Prevalence						
Male	23:57(40.3%)					
Female	34:57(59.7%)					