

## **Brucellosis among human populations in AL-Musaib district, Babylon province/Iraq**

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### **Abstract:**

The study was carried out in Ibn-Saif hospital at AL-Musaib district for the period of January to December, 2000 to study the incidence of brucellosis disease, 369 patients with brucellosis were studied. The predominant associated causes of the diseases were *Brucella melitensis* and *B.abortus*. The age-group of (<1-5 year) was the most frequent group. Over 66% of cases were females. Incidence of the disease among patients was from rural area, case records at hot months more than in cold months.

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**Key words:** brucellosis, Incidence, AL-Musaib, Iraq.

### **Introduction:**

Brucellosis is primarily a zoonotic disease affecting animals and man in many parts of the world (1,2). The disease is worldwide in its distribution. Its incidence varies from country to country (3). Over 500000 cases of brucellosis are reported yearly to WHO from 100 countries, infection of *Brucella melitensis*, distributed in Mediterranean region, Latin American, and Asia. *B.abortus* infection occurs worldwide, but has been effectively eradicated in several European countries, Japan and Palestine land. Whereas, *B.suis* occurs mainly in the

Midwestern United States, South American and South East Asia, whereas *B.canis* infection is most common in North and South America, Japan and European(4).

Human infection is usually acquired by animal contact (5). The disease is transmitted to human through ingestion of unpasteurized milk and milk products or ingestion of uncooked meat. Meantime, it is an occupational hazard to laboratory worker, veterinarians, farmers, shepherds and meat inspectors (6). Human to human transmission is rare (7) but has been reported in association with blood

Transfusion, bone, marrow transplantation (1,2).

The disease in man may be an acute or chronic disease persisting for many years(8). In Iraq , brucellosis is a common disease(9). The main source of the disease in Iraq is the domestic animals(10).

The present study was carried out from January to December,2000 in Al-Musaib district to throw some light on the incidence of brucellosis among human populations.

### **Material and methods:**

Between January to December, 2000 . Three hundred sixty nine patients were admitted to Ibn-Saif hospital in Babylon Governorate, and were recognized to be suffering from brucellosis.

In each patient the following points was examined: sex, age, residency and date of infection.

Bacteriological examination like: Gram stain and blood culture were performed to detect and isolation of microorganism. Identification of each isolate according to Macfaddin manual (11).

The bacteriological diagnosis was confirmed serologically using a conventional brucella agglutination test (Welcome research laboratory/ UK). Positive and negative control sera were used for each batch of the test.

### **Results:**

The study period covered the year 2000 at Al-Musaib province. 369 samples of individuals examined, only 253 were positive for brucella culture, while serologic test was positive in all cases. *B.melitensis* was isolated and diagnosed in 200 cases, *B.abortus* in 169 cases, see table-1.

**Table-1:** Distribution of cases according to brucella blood culture (+ve) and serological test (+ve) .

Brucella spp.	No. of blood culture(+ve)	No. of serology tests (+ve)
<i>B.melitensis</i>	143	200
<i>B.abortus</i>	110	169
Total No.	253	369

The age group distribution of brucella patients was from first year old to forty five year old. The most cases of brucellosis were occurring among age-group(1-5 year old) followed in age group (26-35 year old) and less commonly in other age groups of patients , see table-2.

**Table-2:** Age-groups distribution of patients with brucellosis.

Age-group of patients(year)	No. of Patients	%
<1-5	96	26.0
6-10	27	7.3
11-15	20	5.4
16-20	30	8.1
21-25	45	12.1
26-30	71	19.2
31-35	60	16.2
36-40	8	2.1
41-45	12	3.2
Total No.	369	100

In table-3, the female were more commonly affected than males, number of males patient were 122 (33%) and female patient, 247(66.9%) making male: female ratio (1:2).

**Table-3:** Distribution of cases of brucellosis according to sex of patients.

Sex	No. of patients	%
Males	122	33.0
Females	247	66.9
Total No.	369	100

Incidence of brucellosis among individuals from rural were 220 (59.6%) and from urban 149 (40.3%), see table-4.

**Table-4:** Frequency distribution of cases by residence of patients.

Residence	No.	%
Rural	220	59.6
Urban	149	40.3
Total No.	369	100

Table-5 shows seasonal variations of infection with brucellosis among individuals, peak number of cases was in June and July.

**Table-5:** frequency distribution of cases according to month variation.

Months	No. of cases	%
January	29	7.8
February	26	7.0
March	23	6.2
April	38	10.2
May	39	10.5
June	46	12.4
July	45	12.1
August	35	9.4
September	25	6.7
October	18	4.8
November	22	5.9
December	23	6.2
Total No.	369	100

**Discussion:**

Only 253 samples from 369 patients were positive for bacterial culture , while serological tests were positive in all cases of brucellosis. These results because of brucellae are intracellular and difficult to cultivate, and the most patients are taken antibiotic treatment before bacterial diagnosis (1,7).

The incidence of *B.melitensis* infection is highly in Al-Musaib area , we believe that due to the people who consume sheep and cow milk, most people have sheep , goat and cow at their home.

In this study we found that the disease was greater in age-group of patients (<1-5 year) followed in (26-35 years old) in both sexes. These results due to milk and its products are one of the major sources of brucellosis in Iraq (3). The patients of age-group (1-5 years

old) are more milk consumers especially fresh which is unpasteurized. While the patients of age-group (26-35 years old) , this may be due to increase risk of exposure mainly the occupational exposure as house wives, farmers and shepherd. This can be explained by the fact that farmers are direct contact with infected dairy animal and also more prone to consume milk and its products that are locally made (12).

Brucellosis affects both sexes but the females were more commonly affected than males. This was similar to results of other studies (3,8). Finding was contrast with results of other reports (13,14). Infection of females with brucellosis more than males, this explained that the majority of females were house wives who were direct contact with meat and milk or animal in caring (9).

The incidence of brucellosis among individuals from rural areas were (59.6%) . This result may be due to the most people in Al-Musaib district are of rural habits and in an indirect contact with domestic animals.

The disease was more common during months of summer. This may be due to the exposure to brucellosis was high because of increase milk production following the deliveries of animals in the spring and contamination of milk is more marked (13). Our results are identical to other results of study in Babylon (15).

From this study we concluded that brucellosis is endemic in Al-Musaib district. We are recommending many points for preventing and controlling the disease such as : periodic examination of domestic animals,

Pasteurization of milk and its products, good cooking to meat, health education of people who are contact with animals.

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