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Clinical Features of Patients with Brucellosis During 13 Years

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Key words; brucellosis, clinical features, infection diseases

Introduction

Brucellosis is a zoonotic infection existing worldwide, with predominance in central Asia and some developing countries. The disease is also present, in varying trends, in European countries and the USA [9]. Brucellosis is caused by small, fastidious gram-negative coccobacilli of the genus Brucella. B. melitensis is the most invasive and causes the most severe disease. B. melitensis is a common disease in Turkey [7], and humans are commonly infected through ingestion of raw milk, cheese, meat, or through direct contact with infected animals, products of conception, or animal excreta [10].

Human brucellosis has a wide clinical spectrum [3]. Hence, it presents various diagnostic difficulties as it mimics many other diseases. The disease also produces a variety of nonspecific hematological abnormalities. Bone marrow and the spleen are commonly involved, and such involvement may result in a hypoplastic pattern on the peripheral blood smear [1,4]. Hematological complications of mild anemia and leukopenia have been frequently associated with acute brucellosis, but pancytopenia and thrombocytopenia are less frequently encountered [8.13].

Brucellosis is an endemic and systemic disease with characteristic symptoms of fever, night sweats, and weakness [6]. It can involve any organ or tissue, including the eyes, liver, lungs, nervous system, cardiovascular system, bone, and joints [5]. Localized brucellosis most commonly involves the bones and joints (10 to 80 of cases) [6,11], especially the axial skeleton, and results in spondylitis, sacroiliitis, and peripheral arthritis. In the spine, the vertebral bodies and intervertebral disk areas are the most frequently affected sites [2], and Brucella spondylitis or discitis with epidural abscess formation has been frequently reported [2,12].

The aim of this study was to estimate the clinical manifestations in Armenian patients with brucellosis.

Material and Methods

The subjects of research were patients with diagnosed brucellosis. To satisfy case definitions, a confirmed cases were accompanied by clinical signs including fever lasting several days or weeks, sweating, fatigue and muscle and joint pain, and were confirmed by serological tests. We utilized a retrospective study to investigate the medical records of 783 patients diagnosed with brucellosis during 13 year period at the "Nork" Infectious Diseases Hospital.

The diagnosis of brucellosis was established by demonstrating a brucella titre with a standard tube agglutination test (SAT) for patients with clinical signs and symptoms compatible with brucellosis.

The results are presented as percent, mean, and standard deviation. The results were compared using Spearmen's t test. Differences with a $p<0.05$ were considered statistically significant. Data entry and statistical analysis were performed by application of the Statistical Package for the Social Sciences (SPSS; IBM, Inc., NY, USA).

Results and Discussion

More males (68.6) than females (31.4) presented with brucellosis at "Nork" Infectious Diseases Hospital. The mean age of the patients was 33 years (range 16–90 years). Although female cases were slightly older than males (36.3 vs. 31.9 years), but the difference was not significant ($P>0.05$). More cases were from rural (67.9) than from urban (32.1) areas.

The fever was reported in 43.8 of hospitalized patients (n = 343). In most cases (60.3) the body temperature of patients fluctuated between 37.0-37.9^{0}C, temperature was higher or equal to 40.0^{0}C in only 2.1 of cases (Fig. 1).

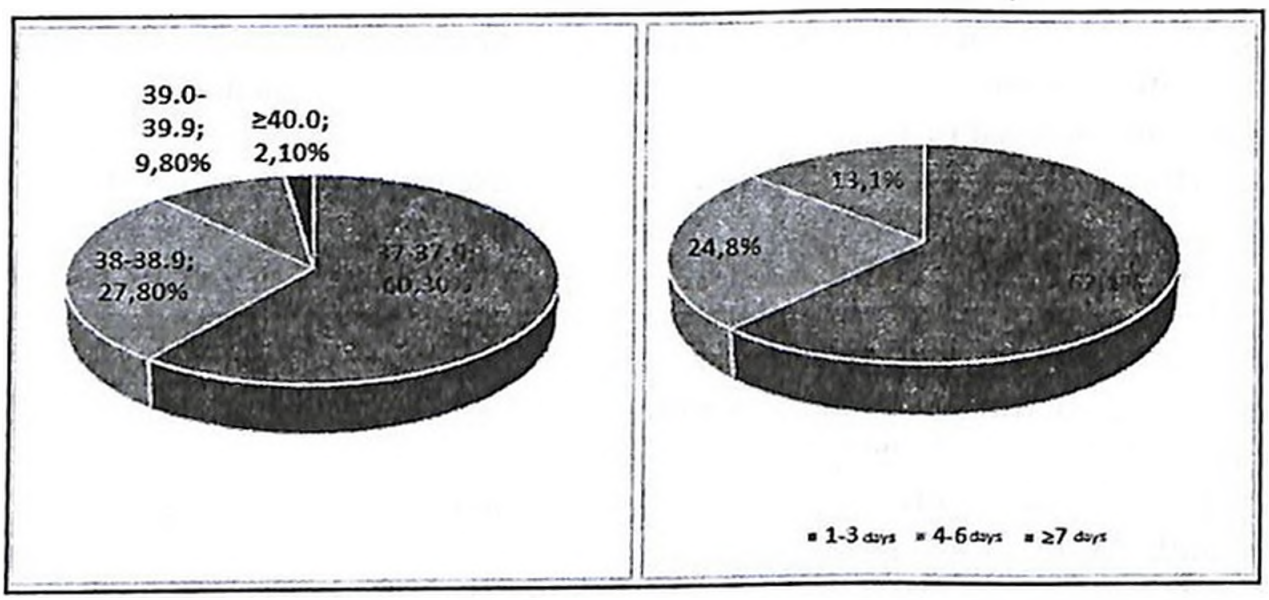

Fig. 1. Description of the structure and duration of fever among patients with brucellosis studied in "Nork" Infectious Diseases Hospital

In 62.1 of cases, the duration of fever was 1-3 days, in 24.8 of cases 4-6 days, and in 13.1 of cases 7 days and more (chart 1). At the same time, it should be noted that the average duration of fever in men (3.9 ± 0.15 days) was significantly higher ($p < 0.05$) than in women (3.1 ± 0.12 days). Of the 343 patients with fever, 333 reported a rise in fever. In particular, the sudden rise in body temperature was registered only 0.6, and gradually 1.5. For the most part (97.9) the increase in body temperature had an intermittent course and often 1-2 days of fever followed by hypothermia of the same course, subsequent cycles having different recurrences.

Rigors were reported among 11.1 of patients (n = 88). In 67 of cases it lasted one day, in 10.2 of cases - 2 days, in 11.4 of cases - 3 days, and in 11.4 of cases - 4 days and more. In rare cases, rigors lasted 11-16 days (3.3). The average duration of the rigors was 2.1 days, with 2.3 days and 1.7 days duration among men and women, respectively.

Excessive sweating was observed in 67.2 of patients. In 49.3 of cases, excessive sweating lasted 1-3 days, in 23.4 of cases 4-6 days, in 15.7 of cases 7-9 days (Fig 2). The clinical course of the disease was accompanied by excessive sweating with the duration of more than 10 days among 11.6 of patients and more than 20 days - 2. The average duration of excessive sweating was 4.8 days, with 4.9 days and 4.6 days for men and women, respectively. There was no significant difference between the sexes in the case of rigors and excessive sweating ($p > 0.05$).

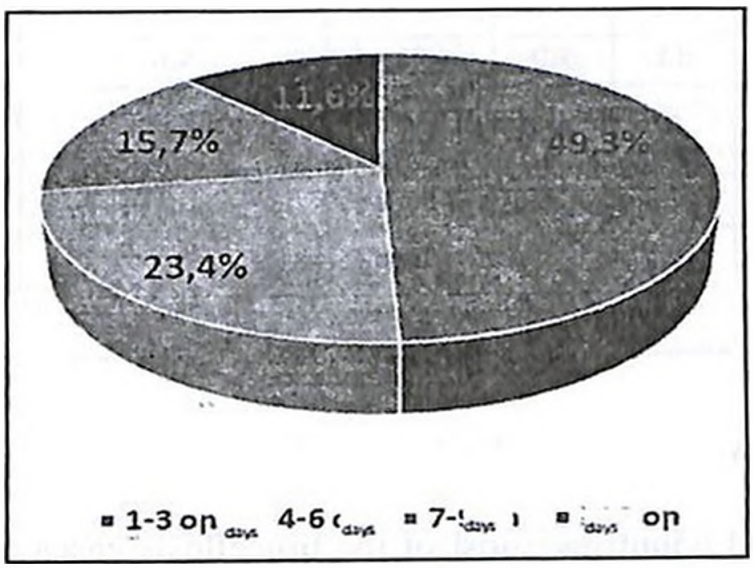

Fig. 2. Description of excessive sweating in patients with brucellosis examined in "Nork" Infectious Diseases Hospital

The presenting symptoms and clinical signs are shown in Table. Most of the patients presented within the first two weeks of their illness. The most common presenting symptoms included fatigue (77.3), excessive sweating (67.2), sore throat/painful swallowing (30.8), fever (43.8), followed by arthralgia/arthritis, etc. For symptoms of excessive sweating and back pain were

registered significant difference between the sexes with a higher prevalence rate among males.

Table

Main clinical symptoms of patients with brucellosis stratified by gender

Clinical symptoms	Total	%	Gender			
			Male n=537		Female n=246	
			Count	Column n %	Count	Column n %
Fever	343	43.8	242	45.1	101	41.1
Shaking/rigors	87	11.1	67	12.5	20	8.1
Excessive sweating*	526	67.2	376	70.0	150	61.0
Headache	131	16.7	85	15.8	46	18.7
Pain behind the eyes	10	1.3	5	0.9	5	2.0
Stiff neck	18	2.3	16	3.0	2	0.8
Sore throat/painful swallowing	241	30.8	163	30.4	78	31.7
Cough	41	5.2	30	5.6	11	4.5
Shortness of breath	7	0.9	6	1.1	1	0.4
Fatigue	605	77.3	411	76.5	194	78.9
Back pain*	196	25	146	27.2	50	20.3
* $p<0.05$						

Conclusion

In developed countries, most of the brucellosis cases occur due to occupational exposure. High-risk occupations for the disease are the raising of livestock, butchery, farming, and veterinary medicine. Most brucellosis cases present in the spring and summer months. Brucellosis has a significant public health impact on society. Misdiagnosis of human brucellosis often results in delays in treatment, with subsequent medical complications if untreated. In addition, a misdiagnosis also leads to unreported human cases, masking the magnitude of the public health burden and the required response. Typically, brucellosis cases

were presented usually with fever, shaking/rigors, sweating, back pain, fatigue, etc.

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13 տարվա ընթացքում հետազոտված բրուցելոզով հիվանդների կլինիկական նկարագիրը

Լ.Ա. Սարգսյան

Ժամանակակից պայմաններում բրուցելոզը շարունակում է պահպանել բարձր համաճարակային վտանգը՝ կապված բազմաթիվ բնական աղբյուրներից պաթոգենի տարածման սպառնալիքի հետ, մասնավորապես Կենտրոնական Ասիայում և որոշ զարգացող երկրներում: Հետազոտության նպատակն է գնահատել բրուցելոզով հիվանդների կլինիկական դրսևորումների հիմնական առանձնահատկությունները հայկական պոպուլյացիայում: Հետազոտության օբյեկտ են 13 տարվա ընթացքում «Նորք» ինֆեկցիոն հիվանդանոցում բրուցելոզով ախտորոշված 783 հիվանդ: Առավել հաճախ հանդիպող ախտանշաններն են հոգնածությունը, առատ քրտնարտադրությունը, կոկորդի ցավը / ցավոտ կլման ակտը, տենդը, որին հաջորդում է արթրալգիան (հոդացավը) կամ արթրիտը (հոդաբորբը) և այլն: Բրուցելոզը հասարակության առողջության վրա էական ազդեցություն ունի: Բրուցելոզով հիվանդների ոչ ժամանակին ախտորոշումը հաճախ հանգեցնում է ծանր բարդությունների: Բացի այդ, ոչ ճիշտ ախտորոշումը բերում է մեծ թվով չարձանագրված դեպքերի՝ քողարկելով հանրային առողջության բեռի մեծությունը և պահանջվող միջոցառումները:

Клиническая характеристика пациентов с бруцеллезом, обследованных в течение 13 лет

Л.А. Саргсян

В современных условиях бруцеллез продолжает представлять высокую эпидемическую опасность, связанную с угрозой распространения возбудителя из многочисленных природных источников. Несмотря на широкий спектр мер по ликвидации бруцеллеза, проводимых во всем мире, на сегодняшний день он остается эндемичным во многих регионах мира, с преобладанием в Центральной Азии и некоторых развивающихся странах. Целью данного исследования была оценка клинических проявлений у армянских пациентов с бруцеллезом. Исследования проводились на 783 пациентах с диагностированным бруцеллезом в инфекционной больнице «Норк» в течение 13 лет. Наиболее распространенные симптомы

включают усталость, повышенное потоотделение, боль в горле / болезненное глотание, лихорадку, сопровождающуюся артралгией / артритом и т. д. Симптомы чрезмерного потоотделения и боли в спине были зарегистрированы в значительной степени среди мужчин. Бруцеллез оказывает существенное влияние на общественное здравоохранение. Ошибочный диагноз бруцеллеза человека часто приводит к задержкам в лечении и последующим медицинским осложнениям, если их не лечить. Кроме того, ошибочный диагноз также приводит к незарегистрированным случаям заболевания людей, маскируя масштабы бремени общественного здравоохранения и требуемых ответных мер.

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