

GENITOURINARY BRUCELLOSIS: RESULTS OF MULTICENTRIC GONCA STUDY

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OBJECTIVES: Brucellosis is a major zoonotic disease in many parts of the world, especially in South and Central America, India, the Mediterranean, and the Middle East. *Brucellae* can affect the genitourinary tract in different ways in males while data is relatively lacking for female patients. Data related to genitourinary brucellosis is relatively lacking and restricted to small case series .The aim of this study was to provide clinical, laboratory, therapeutic, and prognostic data on genitourinary involvement of brucellosis in this largest cases series ever reported.

METHODS: This multi-center study pooled adult patients with genitourinary brucellar involvement from 34 centers treated between 2000 and 2013. The diagnosis of the disease was established by conventional methods. The diagnosis of genitourinary brucellosis was made by the clinicians at the participant centers. A standard questionnaire was sent to the participant centers via the internet and data were collected by using a computer database. The data analysis was performed with SPSS in the Windows V.16.0 program. All tests were two-tailed and statistical significance was assigned to p values less than 0.05.

RESULTS: Overall 390 patients with genitourinary brucellosis (352 males, 90.2%) were pooled. The clinical signs and symptoms of the patients were presented in table 1. In males, the most frequent involved site was scrotal area (n=327, 83.8%) as epididymo-orchitis (n=204, 58%), orchitis (n=112, 31.8%), and epididymitis (n=11, 3.1%). In females pyelonephritis (n=33/38, 86.8%) was significantly higher than males (n=11/352, 3.1%; p<0.0001) (table 2). The mean blood leukocyte count was 7530±3115/mm³.

Routine laboratory analyzes revealed mild to moderate increases for erythrocyte sedimentation rate (ESR), blood C-reactive protein (CRP), lactate dehydrogenase (LDH), aspartate aminotransferase (AST), alanine aminotransferase (ALT), and alkaline phosphatase (ALP) values. The mean treatment duration and length of hospital stay was significantly higher when there is additional brucellar foci (p<0.05). Surgical operation including orchiectomy and abscess drainage was performed in nine (2.3%) patients. Therapeutic failure was detected in six (1.5%), relapse occurred in four (1%), and persistent infertility related to brucellosis occurred in one patient.

Symptoms (n=390)	n (%)
Fatigue	339 (86.9)
Night sweats	326 (83.6)
Fever	321 (82.3)
Loss of appetite	227 (58.2)
Arthralgia	215 (55.1)
Weight loss	212 (54.4)
Lower back pain	200 (51.3)
Signs (n=390)	
Fever (≥38°C)	175 (44.9)
Dysuria	93 (23.8)
Hepatomegaly	93 (23.8)
Splenomegaly	74 (19.0)
Hematuria	26 (6.7)
Genital discharge	24 (6.2)
Flank tenderness	13 (3.3)
Testicular complaints in males (n=352)	345 (98.0)

Examination of scrotal area in males (n=352)	Examination of scrotal area in males (n=352)			Total n (%)
	Right testicle	Left testicle	Bilateral	
Tenderness	128	114	83	325 (92.3)
Swelling	129	131	57	317 (90.1)
Hyperemia	117	107	60	284 (80.7)

Table 1. Clinical Signs and symptoms in genitourinary system brucellosis

Diagnosis	Number	Percent
Male patients (n=352)		
Orchitis	112*	31.8
Epididymitis	11**	3.1
Epididymo-orchitis	204***	58
Pyelonephritis	11	3.1
Abscess formation	6****	1.7
Prostatitis	5	1.4
Glomerulonephritis	1	0.3
Female patients (n=38)		
Pyelonephritis	33	86.8
Glomerulonephritis	2	5.3
Fallopian tube abscess	2	5.3
Tubo-ovarian abscess	1	2.6

Table 2. Final clinical diagnosis of genitourinary system brucellosis cases according to gender

CONCLUSION: Diagnosis of genitourinary brucellosis requires a detailed history, a meticulous physical examination and a detailed laboratory and radiological evaluation. According to data which were the largest case series in the literature, revealed that a localized infection related to testicular area and its surroundings in males or pyelonephritis in women in the absence of leucocytosis and with mild to moderate increases for inflammatory markers could alert to the clinicians for brucellar genitourinary disease. Coexistent arthritis or arthralgia and accompanying mild to moderate increases in liver function tests and ALP in a patient with probable genitourinary infection may strengthen the suspicion of brucellosis even in non-endemic areas. Since the diagnosis of brucellosis is very easy with microbiological tests, serology in particular, and they should be used to differentiate any patient with genitourinary infection.