



BRUCELLOSIS

(Malta Fever)

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ETIOLOGY

- Brucella abortus (cattle)
- B. melitensis (goat/sheep)
- B. suis (swine)
- B. canis (dog)
- Aerobic, non-spore-forming, nonmotile, gram-negative coccobacillary bacteria
- Fastidious → صعب تزرع

EPIDEMIOLOGY

- Rare in industrialized countries
- Prevalent in : in the Mediterranean basin, Arabian Gulf, Indian subcontinent, and parts of Mexico and Central and South America.
- Unpasteurized milk from goats or camels may be used to feed children, thus leading to the development of brucellosis.

EPIDEMIOLOGY

- Routes of infection :
 - Cuts or abrasions
 - Conjunctiva
 - Inhalation of infectious aerosols
 - or ingestion of contaminated meat or dairy products.
- B. melitensis and B. suis tend to be more virulent than B. abortus or B. canis.
- Zoonotic

نقل و حصة
من الحليب

Clinical Findings in Childhood Brucellosis from Selected Seriesa

	Series I ¹⁸ (102 Cases)	Series II ¹⁹ (157 Cases)	Series III ²¹ (200 Cases)	Series IV ²² (48 Cases)	Series V ²⁴ (52 Cases)
Symptoms (%)					
Fever	91	80	70	88	88
Chills	20	NR	NR	75	NR
Sweats	19	NR	22	79	19
Fatigue/malaise	60	91	67	77	29
Anorexia	40	68	NR	NR	NR
Weight loss	48	68	67	56	NR
Arthralgia	73	25	74	32	62
Headache	11	NR	NR	47	21
Backache	16	NR	NR	73	NR
Abdominal pain	11	20	22	44	19
Cough	NR	20	NR	21	12
Arthritis	37	NR	30	11	NR
Lymphadenopathy	16	18	NR	67	23
Splenomegaly	35	55	23	38	52
Hepatomegaly	28	31	23	25	33

CLINICAL MANIFESTATIONS

- nonspecific, beginning 2-4 wk after inoculation
 - classic triad of fever, arthralgia/arthritis, and hepatosplenomegaly
 - fever of unknown origin. *↳ especially sacroiliitis* lasts for a long time (2-3 weeks)
 - abdominal pain, headache, diarrhea, rash, night sweats, weakness/fatigue, vomiting, cough, and pharyngitis

CLINICAL MANIFESTATIONS

- Invasive infections: Meningitis, Bacteremia and SA/Osteomyelitis
- Arthritis of the knees and hips in children and of the sacroiliac joint in adolescents and adults can be found.
- Neonatal and congenital infections with these organisms have also been described.

DIAGNOSIS

- CBC: thrombocytopenia, neutropenia, anemia, or pancytopenia.
- history of exposure to animals or ingestion of unpasteurized dairy products may be more helpful.
- A definitive diagnosis is established by recovering the organisms:
 - Blood Culture. alert micro lab.
 - Bone Marrow culture: alert micro lab. → blood culture لا حد أحسن بكتيريا من
 - Bone marrow cultures may be superior to blood cultures

DIAGNOSIS

- Serology → Practical (سریال و پرایکال)
 - Serum agglutination test (SAT)
 - Measures total Ab (IgM and IgG)
 - False-positive results due to cross-reacting antibodies to other gram-negative organisms:
 - Yersinia enterocolitica
 - Francisella tularensis
 - Vibrio cholerae

RECOMMENDED THERAPY FOR THE TREATMENT OF BRUCELLOSIS

< 8 years: Rifampicin + TMP/SMX Add IV Gentamycin for hospitalized patient
↳ Trimethoprim / Sulfamethoxazole

> 8 years: Rifampicin + Doxycycline Add IV Gentamycin for hospitalized patient
↳ given for at least 1 or 2 months

Note: Streptomycin is added when there is an invasive disease.

→ Remember : Doxycycline is contraindicated in children under 8 years old because of the risk of
- yellow teeth discoloration and
- dental enamel hypoplasia

Condition	Antimicrobial Agents	Dose	Route	Duration of Therapy
Adults Acute brucellosis or relapse	Doxycycline	200 mg/day	PO	6 week
	Plus Streptomycin	1 g/day	IM	2 week
	Or Gentamicin	3–5 mg/kg per day	IM or IV	1 week
	Alternative Doxycycline Plus Rifampin	200 mg/day 15–20 mg/kg per day	PO PO	6 week 6 weeks
Children				
> 8 years	Same as adults			
< 8 years	TMP-SMX ^a	2 DS tablets/day	PO	45 days
	Plus Rifampin	15–20 mg/kg per day	PO	45 days
Complications^b				
Meningitis	Doxycycline	200 mg/day	PO	4–6 months
	Plus Rifampin	900 mg/day	PO	4–6 months
	Or TMP-SMX ^a	2 DS tablets/day	PO	4–6 months
	Plus Rifampin	900 mg/day	PO	4–6 months
	Endocarditis	Same as meningitis ^c		

DS, double-strength; IM, intramuscular; IV, intravenous; PO, by mouth; TMP-SMX, trimethoprim-sulfamethoxazole.
^aTMP-SMX standard formulation (80 mg trimethoprim/400 mg sulfamethoxazole) is given as four standard tablets or two double-strength tablets per day.
^bSee text.
^cValve replacement surgery may be necessary.

Thank
You