In the name of God

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36 y/o woman come with prolonged fever and cytopenia

16-3

- She admitted in hospital because of fever, headache, blared vision and cytopenia
- Worked up as FUO
- Blood and urine culture is negative
- Brain CT and MRI were normal
- CSF analysis was normal
- BMA and BMB was hypocellular
- Abdominopelvic ultrasonography was normal
- Fundoscopy?

22-3

- Wright=1/320
- 2ME=1/160
- Treatment started
- Streptomycin
- Doxycycline
- rifampicin

16-4

- Fever continued so echocardiography was done and referred to our hospital.
- She admitted with fever

- Why?
- Focal infection
- Treatment failure
- Drug fever
- Hemophagocytosis
- Jarisch-Herxheimer reaction
- Another diagnosis

- WBC:4300
- Hb:7.6
- Plt:65000
- ESR:65
- CRP:90
- BUN:13
- Cr:1.1
- TG:139
- CHOL:127

- ALT:5
- AST:21
- ALKp:176
- Wright:1/1280
- Coomb:1/2560
- 2ME:1/640

SONOGRAPHY OF THE ABDOMEN & PELVIC CAVITY

- Liver shows normal parenchymal echogenicity. No space occupying lesion in the liver parenchyma is evident. There is no evidence of splenic or hepatic abscess. Intra hepatic bile ducts, common bile duct and main portal systems show normal diameters. Gall bladder is semi contracted.
- **Spleen with 120mm shows increased size** (splenomegaly) and normal parenchyma echopattern. Tortus and dilated veins are seen in hilum of the spleen.
- Both kidneys have shown normal size and **mild increased cortical and pyramidal echogenicity** with normal corticomedullary difference. (check BUN/Cr is recommended) No stone, hydronephrosis or solid space occupying lesion in kidneys parenchyma is evident.
- Para aortic is not seen because of extensive bowel gaseous distention. Visualized parts of head and body pancreas have shown normal shape and echogenicity. In the pelvic cavity no space occupying lesion or free fluid are defined.

- Mild LV enlargement (LVEDVi=65cc/m2) with normal systolic function (LVEF=55%), no RWMA, no LVH, no LV clot
- -Normal RV size (RVID=2.7cm) and preserved systolic function -Normal RA size, moderate LA enlargement (RAVi= 15cc/m2, LAVi=44cc/m2), no smoky pattern or clot in LA and LAA, LAA emptying velocity= 38cm/s
- -Normal drainage of all PVs to LA, systolic flow reversal in LLPV, RLPV and RUPV, S> D in other PVs
- -Thickened and tricuspid AV, there is a large (2.3cm x 0.8cm) hetergenous hypermobile multilobulated shaggy mass on ventricular aspect of RCC suggestive of vegetation resulting in RCC perforation and severe AI, no significant AS, normal size of ascending aorta (size= 3.1cm),
- -Thickened and dome-shaped MV, restricted motion of PMVL, progressive rheumatic MS (MG= 13mmHg, PHT= 85msec, MV area by MPR=1.85cm2), moderate to severe eccentric-jet MR
- -Normal PV, no PS, mild to moderate PI
- -Thickened and dome-shaped TV, no TS, moderate TR (TRG= 51mmg, SPAP= 56mmHg), moderate PH, TV annulus= 3.3cm -Normal IVC size with >50% respiratory collapse

- **MULTIS LICE SPIRAL CT - SCAN OF THE THORAX WITHOUT CONTRAST MEDIUM**
- Cardiomegaly
- Mild to moderate pleural effusion and passive collapse in both lungs are seen.
- Evidence of smooth interlobular septal thickening and peribronchovascular cuffing is noted which is in favor of pulmonary interstitial edema. Scattered bilateral band and sub segmental atelectasia is defined.

- **Brain CT:**
- Hyperdense focus measured 2 mm adjacent to left side of falx is seen

MULTISLICE SPIRAL CT ANGIOGRAPHY OF THE WILLIS CIRCLE WITH SPECIAL RECONSTRUCTED VIEWS (WITH DYNAMIC IV CONTRAST MEDIUM)

- Right vertebral: Hypoplastic (at V4 segment)
- Left vertebral: Normal
- Basilar: Normal
- Right PCA: Normal
- Left PCA: Normal
- Right ICA: Normal
- Left ICA: Normal
- Right MCA: Normal
- Left MICA: Normal
- Right ACA: Normal
- Right PCOM: Hypoplastic
- Left PCOM: Hypoplastic .

The best therapeutics option

- SURGERY OR MEDICAL
- SURGERY INDICATIONS
- TREATMENT DURATION
- TREATMENT FOLLOW UP
- RECURRENCY

A Review of *Brucella endocarditis*

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- no clear evidence on choice of antibiotics, but those with good penetration of cellular walls of macrophage and with bactericidal effects should be of primary choice.
- The most commonly prevailing regimen is the combination of doxycycline (200mg) and rifampicin (600–900mg) for 10 to 12weekswith an aminoglycoside coverage for initial 2 to 4 weeks.
- Other drugs that have shown some promising evidence and lower recurrence rates are cotrimoxazole, quinolones, in combination with doxycycline.
- However, the European society suggests doxycycline, cotrimoxazole, rifampin orally for more than 3 months.
- The WHO recommends combination of streptomycin and tetracycline, but it has 15 to 40% of recurrence rate.
- **The earlier the initiation of antibiotic regimen, the better will be the outcome.**

Medical management Doxycycline (200 mg) and rifampicin (600–900mg) for 10–12 weeks With an aminoglycosides coverage for initial 2–4 weeks Lower recurrence rates are with cotrimoxazole, quinolones, in combination with doxycycline Others—streptomycin and tetracycline
Surgical management Indications Massive valve damage Persistent CHF despite medical management Removal of infected material Valve replacement Vegetectomy
Combined medical and surgical treatment Preoperative and postoperative appropriate antibiotic coverage with timely surgery

Short- and long-term follow-up outcomes of patients with Brucella endocarditis: a systematic review of 207 Brucella endocarditis Cases

Xiufeng Li, Tan Wang, Yuanzhi Wang, Songsong Xie, Wenbo Tan & Ping Li

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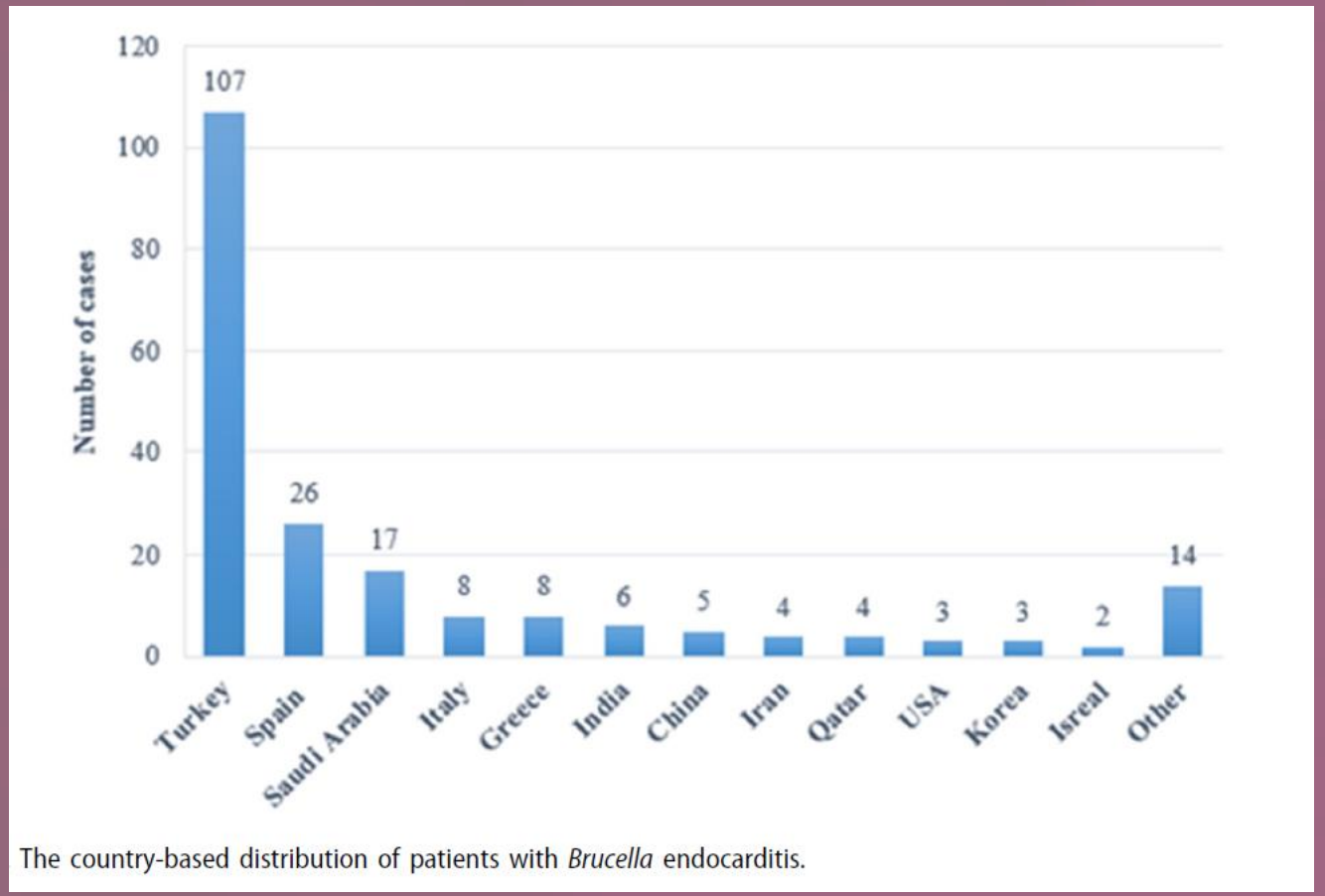

The country-based distribution of patients with *Brucella* endocarditis.

- Keshtkar-Jahromi found that surgery decreased mortality from 32.7% in the medical treatment–only group to 6.7% in the combined surgical and medical treatment group.(1966-2011 French and English article)

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- Keshtkar-Jahromi M, Razavi S-M, Gholamin S, et al. Medical versus medical and surgical treatment for brucella endocarditis[J]. Ann Thorac Surg. 2012;94 (6):2141–2146.

- an early surgical approach with preoperative antibiotic therapy and immediate surgery after clinical stabilization due to the degree of tissue ulceration and destruction caused by

- Brucella.

- 31-4 SURGERY
- 13-5 blood culture positive

- Mitral valve excision: Valve tissue with fibrohyalinization and rare lymphocytes. -No microorganisms were seen
- Aortic valve excision: -Fibromyxoid valve tissue with rare lymphocytes. -No microorganisms were seen.

- Normal LV size (LVEDVi=53cc/m2) with mild systolic dysfunction (LVEF=50%), abnormal septal motion, no LVH (IVS=0.8), no LV clot
- Normal RV size (RVID=2.7cm) with mild to moderate systolic dysfunction (TAPSE=9mm, RVS=8cm/s)
- Mild LA enlargement (LAVi=37.5cc/m2), normal RA size (RAVi=15cc/m2)
- Bileaflet mechanical MV prosthesis with normal leaflets motion and acceptable hemodynamics (MG=5mmg, PHT=73msec, MV E velocity=1.7m/s, DVI=2.08), at least moderate paravalvular leakage from posteromedial site of sewing ring
- Bileaflet mechanical AV prosthesis with normal leaflets and acceptable hemodynamics (MG=7mmHg, PG=14mmg, Vmax=1.8m/s, AT=50msec, DVI=0.52), no paravalvular leakage in TTE, normal size of ascending aorta (size=2.7cm)
- Normal TV, no TS, mild to moderate TR (multi jets, TRG=24mm.Hg, SPAP=29mmHg),
- no PH Normal PV, no PS,
- mild PI Normal size IVC and normal respiratory collapse
- No pericardial effusion

Table 2. Multivariate Binary logistic regression analysis of influencing factors for follow-up outcomes.

Indicators	Odds Ratio	P value	95% CI
Age 40–59	0.277	0.011	0.103–0.748
Age ≥ 60	0.323	0.165	0.065–1.594
Medical treatment	0.404	0.404	0.048–3.400
Heart failure	2.467	0.104	0.830–7.331
Prosthetic valve	0.277	0.232	0.034–2.273
AV involved	0.479	0.225	0.145–1.575
MV involved	0.407	0.274	0.081–2.038

AV aortic valve, *BV* mitral valve

Highlights

(1) The high incidence age of human brucellosis varies by region and occupation.
(2) Follow-up outcomes of younger *Brucella* endocarditis patients may be worse than older patients.
(3) There are no differences between short- and long-term follow-up outcomes of *Brucella* endocarditis patients.

Key Points to remember
• High index of suspicion is required for the diagnosis of *Brucella endocarditis* ◦ In an endemic area ◦ Contact with livestock ◦ Culture negative endocarditis
• Careful examination is needed to pick up the signs and symptoms of early features of endocarditis in brucellosis
• Need to take the help of multiple investigations for the diagnosis of this latent organism
• Surgery is reserved for selective cases of refractory heart failure
• Combined medical and surgical treatment is needed to decrease the morbidity and mortality