

A randomized clinical trial study comparing a triple drug regimen in two different durations for treatment of patients with uncomplicated Brucellosis

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Abstract:

Objective

Brucellosis is one of the most common zoonotic diseases throughout the world and poses a huge health burden especially in developing countries. Despite appropriate antibiotic therapy, these regimens associated with remarkable percentage of relapses, varying from 5% to 15% in uncomplicated brucellosis. However, several clinical trials evaluated different therapeutic regimens, but limited studies are available regarding the optimal duration of treatment for brucellosis infection. The study aimed to determine what treatment duration should be recommended for uncomplicated brucellosis.

Methods

We performed a randomized clinical trial study to compare a triple drug regimen of doxycycline plus rifampin for 6 weeks and streptomycin for the first 7 days with the same regimen for 8 weeks in patients with uncomplicated brucellosis. 144 patients from 14 health centers of Markazi province, Iran were enrolled and following up from May 2009 to end of October 2013. Health centers randomly were assigned (using a table of random numbers) and cases equalization was done to give either doxycycline (100 mg twice daily) plus rifampin (600 mg daily) for 6 weeks and streptomycin (750-1000 mg daily intramuscularly) for the first 7 days or the same regimen for 8 weeks. The primary outcome of the treatment groups was relapse rates measured at 1, 3, 6, 12, and 24 months after cessation of therapy.

Results

Eligible patients were randomized into the two groups with 72 per arm. We found no significant difference in the relapse rate for the 8-weeks of treatment group compared to 6-weeks (9.7% vs. 13.9%). Symptom resolution was achieved in all cases with median 10 days (range 3-40 days) and no cases continued with symptoms after treatment. We found no significant differences between those with and without relapse with respect to age, sex, area of residence, period between clinical presentation and beginning of treatment, and treatment arm (6-weeks vs. 8-weeks). Symptom resolution was achieved in all cases with median 9.5 days and no cases continued with symptoms after treatment. Most of adverse effects were mild and comparable in both groups including gastrointestinal complaints.

Conclusion

We demonstrated overall lower relapse rate than previous studies, but no significant difference between two different duration (6-weeks and 8-weeks) of doxycycline plus rifampin with streptomycin for the first 7 days. Further comparative studies with large sample size should be implemented to achieve a consistent therapeutic regimen for uncomplicated brucellosis, help identify those who may benefit from longer treatment, and to minimize adverse effects and unnecessary continuation of treatment.