Design, quality, and bias in randomized controlled trials of systemic lupus erythematosus.

Karassa FB, Tatsioni A, Ioannidis JP.

Source
Clinical Trials and Evidence-Based Medicine Unit, the University of Ioannina School of Medicine, Ioannina, Greece.

Abstract
OBJECTIVE: To appraise systematically the study design and quality of reporting of randomized controlled trials (RCT) on systemic lupus erythematosus (SLE) and to identify potential defects and biases.

METHODS: RCT with at least 5 patients with SLE were retrieved from MEDLINE, EMBASE, and the Cochrane Library. We analyzed study design, quality of reporting, and trial results.

RESULTS: Ninety-four trial reports (37 on lupus nephritis) were eligible with 2,257 SLE patients (n = 795 in lupus nephritis trials). Median sample size was 28 patients. Fifty-one trials (54.3%) were double blind, but only 31 (33.0%) mentioned the randomization mode, only 19 (20.2%) described allocation concealment, and only 7 (7.5%) were adequately powered. Sixty-three trials (67%) described adequately reasons for withdrawals. Nephritis trials had on average longer followup (p = 0.001) and were less likely to be double blind (p < 0.001), to describe reasons for withdrawals [both overall (p = 0.008) and per arm (p = 0.009)] and to involve a comparison against placebo or no treatment (p < 0.001). Larger trials scored higher on several quality characteristics. Significant efficacy or trend for efficacy was claimed in 72 reports (76.6%) and this was even more common in trials published in 1999-2002 (89.5%). Significant efficacy was found more frequently in trials that clearly specified withdrawals per arm (p = 0.001) and outcomes (p = 0.001) and used intention-to-treat analyses (p = 0.03). Besides outcome specification, no other quality variables seemed to improve significantly over time.

CONCLUSION: Several aspects of the design and reporting of RCT on SLE can be improved. Larger, adequately powered, and accurately reported trials are needed.