Topical Antibiotic for Preventing Surgical Site Infections of Clean Wounds

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Abstract:

In general, topical antibiotic agents are not indicated for clean surgical wounds to prevent infections, and the recommended dosage remains uncertain. We conducted a systematic literature review and meta-analysis to assess the efficacy of topical antibiotic agents in comparison with non-antibiotic agents for preventing surgical site infection (SSI) in clean incisions. A search of literature from randomized controlled trials (RCTs) was performed using PubMed, Embase, and Cochrane Databases. Eleven RCTs were included. With random-effects modeling, the pooled risk ratio (RR) of developing SSI was 0.83 (95% confidence interval [CI], 0.61–1.16; I2, 0%). In subgroup analyses, no reductions in SSI were observed when topical antibiotic agents were used to treat incisions due to spinal (RR, 0.75; 95% CI, 0.40– 1.38; I2, 0%), orthopedic (RR, 0.69; 95% CI, 0.37–1.29; I2, 0%), dermatologic (RR, 0.77; 95% CI, 0.39–1.55; I2, 65%), or cardiothoracic surgeries (RR, 1.31; 95% CI, 0.83–2.06; I2: 0%). The incidence of SSI across different operative phases did not differ when topical antibiotic agents were compared with non- antibiotic agents (RR, 0.80; 95% CI, 0.56–1.14; I2, 0%). The results show that topical antibiotic agents provide no clinical benefit for preventing SSI in clean incisions.