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Standard versus newer antibacterial agents in the treatment of severe acute exacerbation of chronic obstructive pulmonary disease: a randomized trial of trimethoprim-sulfamethoxazole versus ciprofloxacin.

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BACKGROUND. Although the use of antibiotics in the treatment of acute exacerbation of chronic obstructive pulmonary disease (COPD) is largely accepted, controversy remains regarding whether the choice of antibiotic has any impact on outcome. Our aim was to compare the effects of the combination of trimethoprim and sulfamethoxazole and ciprofloxacin in patients treated for severe COPD exacerbation requiring mechanical ventilation.

METHODS. In a randomized, double-blind trial, we included 170 patients with an acute exacerbation of COPD requiring mechanical ventilation. Enrolled patients received trimethoprim-sulfamethoxazole (n = 85) or ciprofloxacin (n = 85) for 10 days. Main outcomes were hospital death and need for an additional course of antibiotics. Secondary outcomes were duration of mechanical ventilation, length of hospital stay, and exacerbation-free interval.

RESULTS. Combined hospital death and additional antibiotic prescription rates were similar in the 2 groups (16.4% vs 15.3% for trimethoprim-sulfamethoxazole group vs ciprofloxacin group; difference, 1.1%; 95% confidence interval [CI] -9.8% to 12.0%; P = .832). Hospital death occurred in 7 patients (8.2%) receiving trimethoprim-sulfamethoxazole and 8 patients (9.4%) receiving ciprofloxacin (difference, -1.2%; 95% CI, -9.7 to 7.3; P = .90). The need for an additional antibiotic course was observed in 8 patients in the trimethoprim-sulfamethoxazole group and 5 patients in the ciprofloxacin group (difference, 2.3%; 95% CI, -5.4 to 10.0; P = .549). The mean exacerbation-free interval (+/- standard deviation) was similar in both treatment groups (83 +/- 25 vs 79 +/- 22 for the trimethoprim-sulfamethoxazole group vs ciprofloxacin group; difference, 4 days; 95% CI, -15 to 19 days; P = .41). Duration of mechanical ventilation and hospital stay was not significantly different between the 2 groups.

CONCLUSIONS. In patients with acute exacerbation of COPD requiring mechanical ventilation, efficacy of trimethoprim-sulfamethoxazole was not inferior to ciprofloxacin. Trial registration. ClinicalTrials.gov identifier: NCT00791505.

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