Sulfamethoxazole/trimethoprim vs Fluoroquinolones for the Treatment of Stenotrophomonas maltophilia Bloodstream Infections

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Background: The drug of choice for Stenotrophomonas maltophilia (SM) infections is sulfamethoxazole/trimethoprim (S/T). Use of S/T may be limited due to allergy, intolerance, or resistance. Recent literature suggests levofloxacin may be a viable option for the treatment of SM bloodstream infection (BSI); however, clinical outcomes data are limited overall for SM BSI. The objective of this study was to assess the clinical outcomes of patients with SM BSI that were treated with S/T compared to fluoroquinolones (FQ).

Methods: Patients considered for study inclusion were > 18 years old, had at least one positive blood culture for SM between January 2004 and 2014. Hospitalized at Northwestern Memorial Hospital, and treated with at least 48 hours of FQ or S/T monotherapy. Baseline demographic variables including treatment were used to assess their impact on clinical outcomes. Stepwise multivariate regression was performed to assess predictors of mortality.

Results: 54 patients were included in the analysis (n= 22 FQ [levofloxacin n=4, moxifloxacin n=4; cirfloxacin n=11] and n= 32 S/T). Baseline characteristics were similar between treatment groups. Mortality rates between FQ and S/T differed numerically but not statistically (n= 13, 24.1% vs 0 and levofloxacin and cirfloxacin and n= 10, 31.2%, respectively, p=0.20). Time to death from positive culture also differed numerically between treatment groups (FQ n=3 days, IQR 11-44, S/T n=12.5 days, IQR 12-66, p=0.61). Bivariate analysis revealed modified APACHE II, septic shock, broad spectrum antibiotics prior to culture, and concurrent positive respiratory cultures with SM as positive predictors of mortality (p<0.05 for all). In a multivariate analysis, modifiedAPACHE II score, septic shock, mechanical ventilation, organ dysfunction, broad spectrum antibiotics prior to culture, and concurrent positive respiratory cultures with SM were significant predictors of mortality (p<0.05 for all). 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Conclusion: Fluoroquinolones showed similar clinical outcomes to those treated with S/T for S. maltophilia bloodstream infections. Septic shock, organ dysfunction, mechanical ventilation, and concurrent positive S. maltophilia respiratory cultures were identified as risk factors for mortality in bivariate analyses. Multivariate analyses indicated that factors other than treatment had an impact on clinical outcomes. Further study is required.