primary studies - published, non RCT

Health care costs in a randomized trial of antimicrobial duration among cystic fibrosis patients with pulmonary exacerbations.

Code: PM35300932 **Year:** 2022 **Date:** **Author:** Gold LS

Study design (if review, criteria of inclusion for studies)

Cost-analysis

Participants

Cystic fibrosis (CF) patients experiencing pulmonary exacerbation (PEx).

Interventions

Shorter versus longer durations of treatment. METHODS: Among people with CF experiencing PEx, we calculated 30-day inpatient, outpatient, emergency room, and medication costs and summed these to derive total costs in 2020 USD. Using the Kaplan-Meier sample average (KMSA) method, we calculated adjusted costs and differences in costs within two pairs of randomized groups: early robust responders (ERR) randomized to receive treatment for 10 days (ERR-10 days) or 14 days (ERR-14 days), and non-early robust responders (NERR) randomized to receive treatment for 14 days (NERR-14 days) or 21 days (NERR-21 days). RESULTS: Patients in the shorter treatment duration groups had shorter lengths of stay per hospitalization (mean ± standard deviation (SD) for ERR-10 days: 7.9 ± 3.0 days per hospitalization compared to 10.1 ± 4.2 days in ERR-14 days; for NERR-14 days: 8.7 ± 4.9 days per hospitalization compared to 9.6 ± 6.5 days in NERR-21 days). We found statistically significantly lower adjusted mean costs (95% confidence interval) among those who were randomized to receive shorter treatment durations (ERR-10 days: $60,800 ($59,150 - $62,430) vs $74,420 ($72,610 - $76,450) in ERR-14 days; NERR-14 days: $66,690 ($65,960-$67,400) versus $74,830 ($73,980-$75,650) in NERR-21 days). CONCLUSIONS: Tied with earlier evidence that shorter treatment duration was not associated with worse clinical outcomes, our analyses indicate that treating with shorter antimicrobial durations can reduce costs without diminishing clinical outcomes.

Outcome measures

30-day inpatient, outpatient, emergency room, and medication costs and summed these to derive total costs in 2020 USD. Adjusted costs and differences in costs within two pairs of randomized groups: early robust responders (ERR) randomized to receive treatment for 10 days (ERR-10 days) or 14 days (ERR-14 days), and non-early robust responders (NERR) randomized to receive treatment for 14 days (NERR-14 days) or 21 days (NERR-21 days).

Main results

Patients in the shorter treatment duration groups had shorter lengths of stay per hospitalization (mean ± standard deviation (SD) for ERR-10 days: 7.9 ± 3.0 days per hospitalization compared to 10.1 ± 4.2 days in ERR-14 days; for NERR-14 days: 8.7 ± 4.9 days per hospitalization compared to 9.6 ± 6.5 days in NERR-21 days). We found statistically significantly lower adjusted mean costs (95% confidence interval) among those who were randomized to receive shorter treatment durations (ERR-10 days: $60,800 ($59,150 - $62,430) vs $74,420 ($72,610 - $76,450) in ERR-14 days; NERR-14 days: $66,690 ($65,960-$67,400) versus $74,830 ($73,980-$75,650) in NERR-21 days).

Authors' conclusions

Tied with earlier evidence that shorter treatment duration was not associated with worse clinical outcomes, our analyses indicate that treating with shorter antimicrobial durations can reduce costs without diminishing clinical outcomes.

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See also

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Keywords

Anti-Bacterial Agents; Bacterial Infections; Drug Administration Schedule; Infection; Intravenous; pharmacological_intervention;

Respiratory Tract Diseases; Respiratory Tract Infections; Exacerbation;