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Abstract (poster session)

Monitoring unintended consequences of changes in antibiotic policy in medical admissions wards

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Objective: To monitor 30-day mortality in patients with sepsis following the introduction of a restricted antibiotic policy. **Method:** In 2008 national guidance was issued to restrict the use of antibiotics associated with a higher risk of *Clostridium difficile* infection (CDI). As part a programme to monitor both intended and unintended consequences of this widespread change in antibiotic policy a study using an interrupted time series analysis with a segmented regression autoregressive error model was used to evaluate antibiotic use, CDI rate and 30-day mortality in acute medical admissions wards in NHS Tayside. An new outcome indicator for monitoring mortality in patients with sepsis was validated by comparing 30-day mortality in 2157 cases with blood cultures prospectively collected from 2008-2010 vs. 5839 comparators who were in the same wards for the same length of stay (+/- 1 day) but did not have blood cultures taken. Sepsis was present in 1342 (62.2%, 95%CI 60.2% - 64.3%) of 2157 blood culture cases. After adjustment for age, gender and co-morbidity the odds ratio for 30-day mortality in blood culture cases vs. comparators was 3.97 (95% CI: 3.34 - 4.72). Most of the increased risk was attributable to cases with sepsis (OR 4.57, 95% CI 3.64- 5.71), whereas risk of mortality was not increased in patients who had blood cultures taken but did not have sepsis (OR 1.51, 95%CI 0.79-2.88, p=0.217). Blood culture sampling was then used as a proxy marker to identify patients with sepsis within the medical admissions study population. **Results:** There was a 16% increase (95% CI: -1%, 33%) in the use of recommended antibiotics and a 49% decrease (95% CI: -69%, -28%) in use of restricted antibiotics six months after the new policy was introduced which contributed to a 28% decrease (95% CI: -49%, -6%) in CDI. No other significant interventions were implemented in the acute medical admissions unit during this time period and a temporal relationship between antibiotic use and CDI was established. There was a non-significant decrease of 25% (95% CI: -49%, -1%) in 30-day mortality in patients with a blood culture taken. Subgroups analyses by age and Charlson Co-morbidity Index Score showed non-significant decreases in 30-day mortality. **Conclusion:** The results provide assurance that restricting agents associated with a higher risk of CDI had no unintended adverse consequences on 30-day mortality in patients with sepsis in medical admissions wards in NHS Tayside.