LONG-TERM OUTCOMES of Healthcare Identified Clostridium difficile Infections (HICDI) in Hospitalized Patients
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STUDY AIM
We looked at outcome of patients who CDI were identified in the hospital (2012-2016).

STUDY TYPE
Retrospective Cohort study of patients who suffer HICDI while admitted to Canberra hospital over 5 years (2012-2016).

Study Consort
564 cases of CDI
819 patients admitted
214 non cases
605 patients admitted to ICU
94 patients with MODS
584 patients aged 50 or over

Study Population
Mean age (years) 63.2±13.2
Mean BMI 26.1±4.3

ISSUE

Clostridium difficile Infections (CDI)
- Limited Australian data on long-term outcomes for patients who suffer Clostridium difficile infections (CDI)

Primary Outcome
- 2-year all-cause mortality in the study group was 40.1% (38.7/466), with mortality directly attributed to CDI only 3%.
- No significant difference in trend of mortality rates over years.
- Patients suffering > 1 episodes of HICDI had higher 2-year all cause mortality compared to those with single episode.

Secondary Outcomes
Factors affecting of CDI resolution
- Median time for developing CDI after hospital admission was 5 days (IQR 3-10)
- Duration of diarrhea once infected was 6 days (IQR 3-10)
- Pharmacotherapy used (episodes)
  - Metronidazole in 68% (371/544)
  - Sequential metronidazole-vancomycin in 10.2% (56/544)
  - Vancomycin alone in 7.16% (39/544)
  - Combination therapy in 5.5% (30/544)
- Compared to patients without prior antibiotic usage, those with prior exposure took 70% longer time for resolution of CDI.
- Factors affecting resolution of CDI tabled above.

Learning Points
- CDI has significant long-term mortality in hospitalized patients who suffer with multiple infections.
- Mortality rates has remained high over the years across globe.
- Antecedent antibiotic exposure significantly impacts the time of resolution of diarrhea.
- Infection control behavior & antibiotic stewardship play important role in prevention.
- Given a retrospective single center design, its results have limited external validity.

DISCUSSION
- No standard definition on what constitutes short-term or long-term mortality.
- Long-term mortality high across the globe.

Risk factors for CDI

Factors affecting resolution of CDI tabled above.
- Number of CDI episodes decreased over the 5-year study period, but mortality did not.
- Our study had higher CA-CDI rates compared to a Victorian study reported before (2010-2014).
  - 20-23.5% vs 40.2% in our study & increasing proportion of HA-CDI from 2010 to 2014 (Worth et al)
- Predictors of poor outcomes
  - Low albumin & ICU admission reported as predictors of poor short-term outcome in previous studies.
- Balam et al reported significant risk estimates of GI symptoms for up to 2 years after an index CDI episodes (HR 1.47 95%CI 1.04-2.08).

References

Directions
- A Cox proportional hazard regression model with time-varying covariates was used to identify and assess the significant predictors.
- The effect measures were expressed as Hazard Ratios (HR) with 95% confidence intervals (CI).
- A multivariable model was built for each outcome after univariate analysis to identify significant factors.
- A p-value <0.05 was considered statistically significant.

PREDICTORS OF MORTALITY

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STATISTICS

Distribution of CDI in study period

All-cause Mortality

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Notes