The aim of this study was to calculate the incidence of catheter-related infection (CRI) in a CRS and HIPEC patient population and to assess its influence on length of hospital stay” Waters et al (2019).

Abstract:

Background: Cytoreductive surgery (CRS) and hyperthermic intra-peritoneal chemotherapy (HIPEC) is a complex surgical intervention with associated risks. Central venous catheter (CVC) line sepsis is one of a number of potential morbidities. The aim of this study was to calculate the incidence of catheter-related infection (CRI) in a CRS and HIPEC patient population and to assess its influence on length of hospital stay.

Methods: Data were collected on consecutive patients who underwent CRS HIPEC between August 2013 and October 2017. Data included patient demographics, timing of CVC insertion/removal, time spent in critical care, and CVC tip/blood culture results. Charts were reviewed for patients with both positive CVC culture and positive blood cultures to assess for evidence of catheter related infection and systemic inflammatory response syndrome (SIRS).

Results: Data on 100 consecutive CRS HIPEC operations performed between August 2013 and October 2017 was analyzed. There were 11 CRIs in 100 CVCs, resulting in a CRI rate of 16.2 per 1,000 CVC days. Patients within the CRI group had a longer high-dependency unit (HDU) stay compared with the non-septic group (6 days vs. 4.07 days, p < 0.05). The CVC duration for the CRI and non-CRI group was 8.4 and 7.6 days, respectively (p = 0.12). The CRI group also had an increased total hospital length of stay (LOS; 20.8 days vs. 15.4 days, p < 0.05). On average, CRIs occurred eight days post-operative and four days post-HDU discharge. There was no association identified with longer CVC duration (p = 0.34). There has been an annual decline in CRI rates in CRS and HIPEC patients over the duration of the study period from 19.1 per 1,000 CVC days in 2016 to 8.2 per 1,000 CVC days in 2017. Conclusion: This is the first study to report on CRI rates in patients undergoing CRS and HIPEC. The CRI rate of 16.2 per 1,000 CVC days is higher than the overall national figure of 5.2 per 1,000 for CVC lines inserted in the operating room. Patients who developed line sepsis had longer HDU and longer overall hospital stay. Catheter-related infection was noted post-HDU discharge in all cases. Implementation of a CVC care bundle in the later years of the study period coincided
with a reduction in CRI rates.

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