This analysis reports...on complications and complication-related resource utilization and costs over time in a real-world patient population undergoing CAWR.

**Objective**

- Over 335,000 ventral hernia repairs (VHR) are performed in the US each year, of which 15% are estimated to be in patients requiring complex abdominal wall reconstruction (CAWR).
- The CAWR procedure is complex and can include a large defect size, multiple comorbidities such as chronic obstructive pulmonary disease, smoking, obesity and diabetes, prolonged OR time, concomitant procedures and component separation to restore abdominal wall function.
- Surgery in CAWR patients is resource intensive and it is estimated that this subset of patients consumes 15% of hospital resources associated with VHR.
- Little information is available on complication-related resource utilization and costs over time in patients with CAWR.
- Under pay-for-performance requirements, financial decision makers need better information to allocate healthcare resources and budget dollars.

**Methods**

- The CAWR patient population was defined by adapting the approach described in DeNoto et al. 2013.
- A cohort of patients with CAWR during inpatient stays between 1/1/08 and 6/30/11 (Index event) were followed for 12 months.
- Related complications, refunds for facility-based care and related costs were evaluated in the index hospitalization and for 30-60-90-365 days after discharge.
- Insurance claims from the Truven Health Analytics MarketScan® database, inpatient costs from the Healthcare Cost and Utilization Project (HCUHP), and Medicare claims from the Medicare MarketScan database (1/1/07 to 6/30/11) were used to estimate costs (USD) from the hospital perspective.
- Costs attributed to each complication category included costs for visits and admissions for which the complication was a reported diagnosis.
- The incremental cost of a complication during the index hospitalization was evaluated by subtracting the average cost of an uncomplicated index event from the average cost of index events with the complication.
- All costs were normalized to 2013 dollars at 3% per annum.

**Results**

- The study population included 13,463 patients.
- Rates of patients experiencing any complication were 20.8%, within 30 days of discharge, 25.2% within 60 days, 27.4% within 90 days, and 37.8% within 365 days (Figure 1).
- In total, 37.4% of patients experienced a complication over 12 months.
- The most frequently occurring complications over 12 months were infection (16.6%), bowel obstruction (12.6%), skin/connective tissue-related complications (12.7%), and wound complications (6.1%) (Figure 2).
- The most costly complication over the 12 month period was septicaemia, which had an average cost of $53,047 per patient; septicemia was reported (16.6%), followed by enteritis/colitis (12.6%), and infected mesh (12.5%).
- More frequently occurring complications were also expensive to treat: The average incremental 12 month cost of complications was $20,000 for component separation to restore abdominal wall function.
- Complications during the index procedure were associated with significantly longer hospital stays.
- Further analysis of complications, costs and resource utilization is recommended to examine complications occurring during the initial ventral hernia hospitalization.
- Further study is recommended to validate these findings.

**Conclusions**

- Healthcare resource utilization, costs and complications for complex abdominal wall reconstruction patients increase over time.
- Resource utilization is exacerbated when complications occur, including significantly extended LOS when complications occur during the initial ventral hernia hospitalization.

- Patient Demographics

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**Table 1. Patient Demographics**

**Figure 1: Kaplan-Meier Analysis Of The Risk Of First Complication As A Function Of Time After Index Event**

**Figure 2: Distribution Of Complications Among Patients Experiencing A Complication Over 12 Months (Weighted By Payor)**

**Figure 3: Average 12 Month Costs With and Without Complications**

**Figure 4: Length Of Stay With and Without Complications**

**References**

6. Medicare Claims from the Medicare MarketScan database (1/1/07 to 6/30/11) were used to estimate costs (USD) from the hospital perspective.
7. Costs attributed to each complication category included costs for visits and admissions for which the complication was a reported diagnosis.
8. The incremental cost of a complication during the index hospitalization was evaluated by subtracting the average cost of an uncomplicated index event from the average cost of index events with the complication.
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