Cost effectiveness of DACC surgical dressing for prevention of SSI following caesarean section

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Paper:
JOURNAL OF WOUND CARE VOL 28, NO 4, APRIL 2019

Background:

Surgical infections are associated with high costs for the society and the humans concerned. Post-caesarian SSIs have been estimated to extend the average hospitalization period and cause significant additional costs.

Approximately 208,000 caesarean section procedures were performed in the UK in 2017. There is no overall caesarean section SSI incidence figure available for the UK but approximately 2.9% of the procedures have been estimated to result in an SSI based on incidence rates in Scotland and Wales.

Every SSI avoided, leads to substantial cost savings. For the patient, an avoided SSI both leads to a shorter hospital stay and diminished suffering. An SSI has been calculated to cost the NHS up to £10,523.

Objective:

The objective of this assessment was to evaluate the cost-effectiveness of Sorbact® surgical dressings compared to standard surgical dressings (SOC) in the context of the UK National Health Service (NHS).

Method:

An economic model was built based on the results of a randomised controlled trial carried out in Poland that evaluated Sorbact® surgical dressing (DACC) against standard of care (SOC, Tegaderm™ +Pad). The trial recorded the presence of SSI and associated resources used during the first 14 days after a caesarean section. The model applied two models

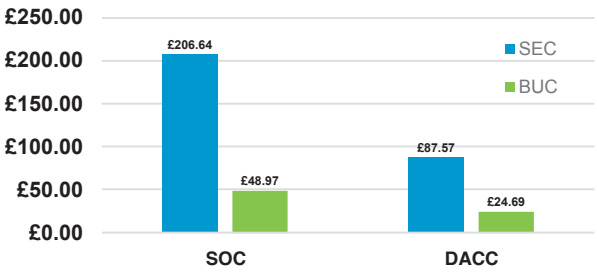
- a single episode cost of £3,964 per SSI (data from the literature)
- a costing based on the resource use observed in the clinical trial study groups regarding a) SSI-attributable hospital length of stays, b) outpatient appointments, c) use of systemic antibiotics and d) use of post-operative dressings.

Results:

The model resulted in estimated cost savings with Sorbact® compared to standard surgical dressings

- £119.07 (57.6%) when also applying a single episode cost (=SEC) per SSI (cost data from the literature)
- £24.27 (49.6%) per patient for trial-based costings (bottom-up costing = BUC)

The number of SSIs noticed with Sorbact® was 5 (1.8%) vs. 14 (5.2%) with standard dressings (SOC). The relative risk reduction for SSI was 65% by using Sorbact® surgical dressings. The main cost driver was prolonged hospitalization due to SSI. The mean length of SSI-attributable hospitalization was 2.36 days. No patients in the Sorbact® group were hospitalized.



Conclusion:

The results of this economic analysis based on clinical data highlight significant resource and cost savings associated with the lower SSI rate observed with Sorbact® versus SOC. Two types of sensitivity analyses testing the robustness of the analysis and outcome were performed. Both showed that the results were robust.

On the evidence of this clinical trial, a strict use of the bacterial-binding dressing for all caesarean section patients has potential to reduce the number of SSIs by around 65%: from 6,032 (2.9%) to 2,088 (1.0%) based on UK incidence figures of SSIs and caesarean sections from 2017.

The resulting savings to the NHS during one year, assuming a conservative SSI episode cost of £3,976 and SSI-attributable hospital length of stays of 2.36 days, would be £15.7m and a reduction of approximately 9,300 bed-days.