

Quality Improvement Project: The role of Leukomed® Sorbact® dressing in reduction of the surgical site infection following caesarean section

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Background

Over the past three decades, caesarean section (CS) rates have been increasing globally.

Surgical site infections (SSI) following CS are a common cause of morbidity. The reported global SSI rate (following CS) ranges from 3 -15%¹, with an average of 9.6% within the UK². SSI heavily impacts on patient welfare³ and carries a substantial financial burden to the healthcare system, including increased length of hospitalisation and post- discharge care costs^{3,4}. The average cost is estimated to be just over £10,000 per person, with deep-incisional SSIs costing a staggering £100,000 per patient⁵. Decreasing SSI rates reduces readmissions, antibiotic use and benefits the patient’s quality of life.

Leukomed® Sorbact®: Based on NICE recommendations (MTG55, 2021) Leukomed® Sorbact® (LS) have shown good clinical effectiveness in the reduction of post-caesarean SSI and results in cost savings (average CS SSI is £4,048)⁶. The Dialkylcarbamoyl chloride (DACC)-coated surface binds and inhibits the growth of bacteria. It is a comfortable, light, waterproof dressing which adheres well to skin. In comparison to the existing dressing - Aquacel Surgical (AC), it is cheaper by approximately £1.50-£2.50 per dressing, depending on the size used.

ISLA (Isla Care Ltd): This project became possible with the introduction of the innovative computerised wound monitoring service named ISLA. To date, over 6,000 patients at GSTT have benefitted from proactive digital wound monitoring after caesarean section (CS) surgery. The digital system (ISLA) collects patient-reported SSI and antibiotic use for wounds after they leave the hospital. To adopt ISLA into our project, additional questions were built into ISLA template, including the type of dressing used at CS, dressing integrity and the patients’ satisfaction.

Objectives

- To evaluate clinical and cost effectiveness of LS dressing in reduction of surgical site infection (SSI) after caesarean section (CS).
- To compare in vivo the performance of two types of wound dressing (LS vs AC) applied after CS delivery.
- To assess patient satisfaction with both types of dressing.

Design and Methodology

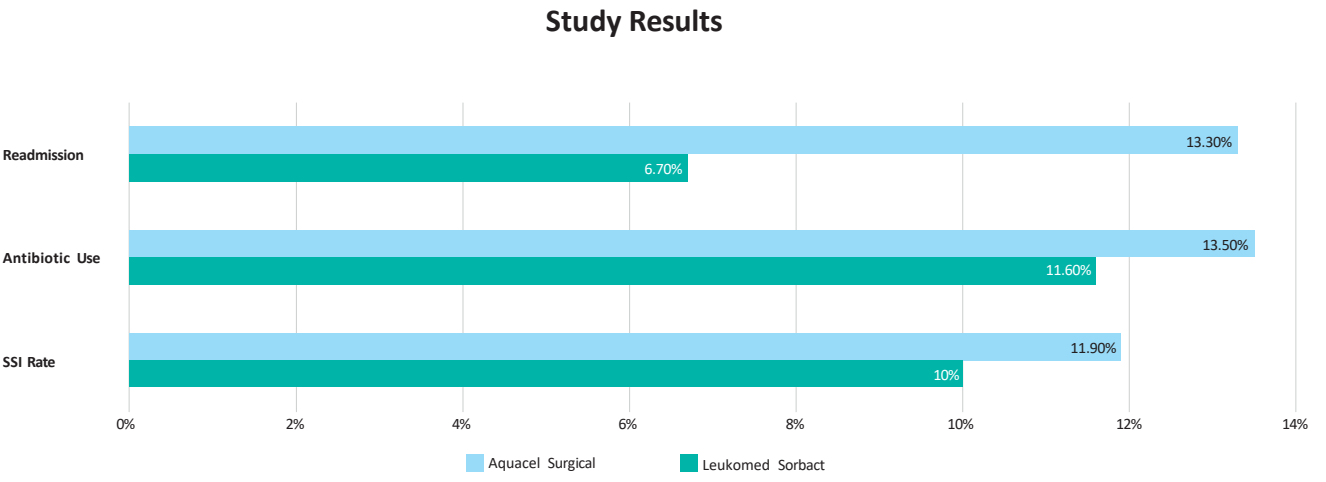
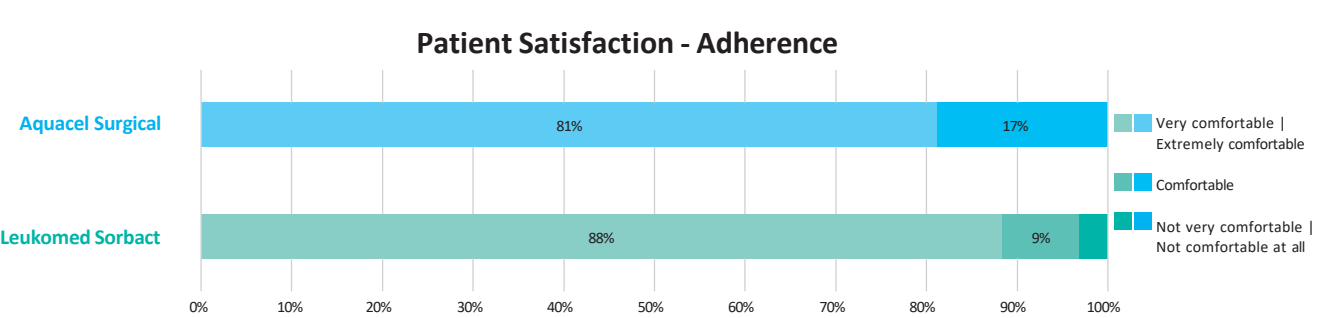
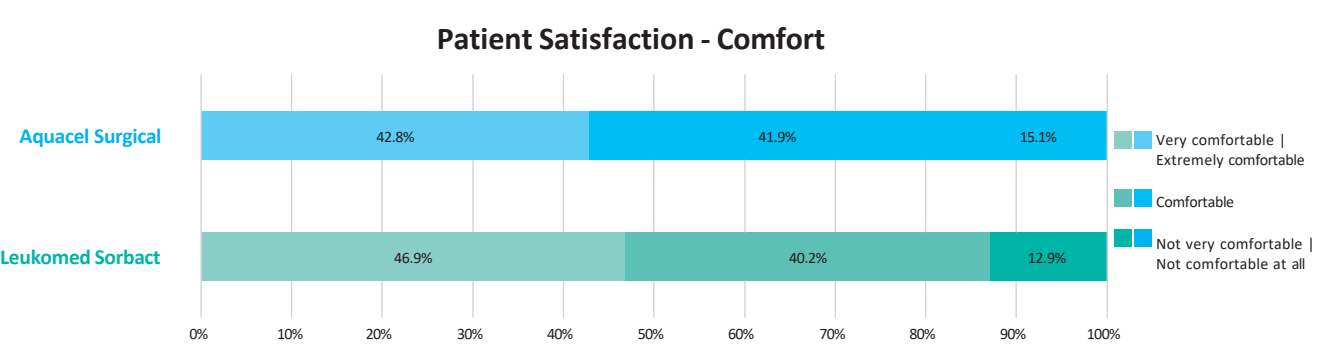
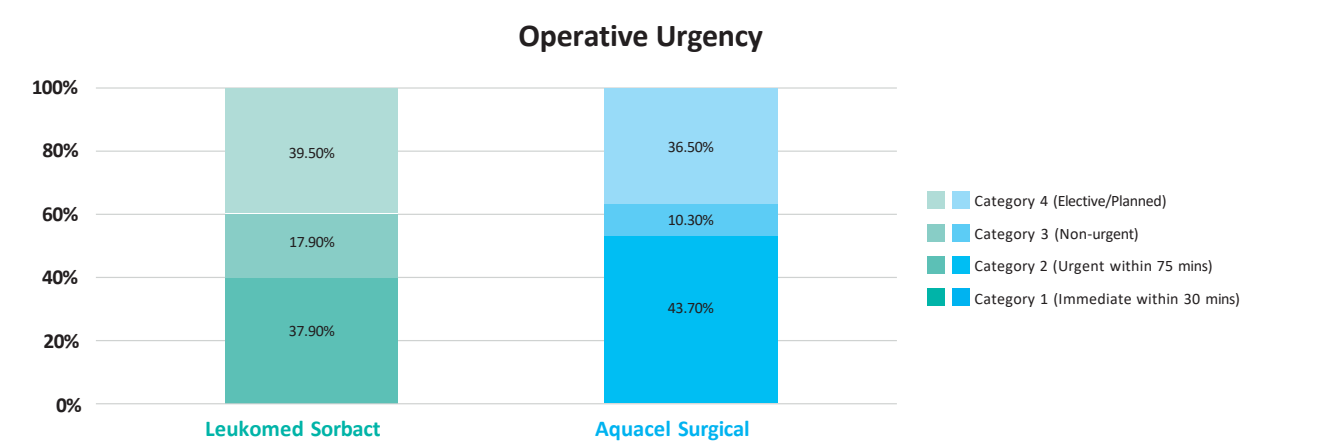
Design:
A pilot non-randomized case-controlled prospective study.

Method:
We included all patients >18 years old who delivered by CS from November 2023 to January 2024, with the exclusion of patients without a smartphone or email account. ISLA was then used to collect the post-discharge surveillance data on 427 cases after application of Leukomed Sorbact dressing in study group A (n=301) and Aquacel dressing in control group B (n=126). The patient satisfaction survey questionnaire was also collected via ISLA.

Measures:
Primary outcomes: SSI rate % between two dressing types, including other wound issues.
Indicators: Number of dressings used, patient satisfaction, antibiotic consumption, readmission rates.
Balancing measure: Perform a cost-effectiveness analysis comparing the two dressing types.

Results

Patient Cohort Characteristics		
	Leukomed Sorbact (A) – Study group	Aquacel Surgical (B) – Control group
Number of cases	n=301	n=126
Age (mean, range)	34, [18-64]	33, [16-47]
BMI <40 (n, %)	283 (94.0%)	108 (85.7%)
BMI >40 (n, %)	8 (2.7%)	9 (7.1%)
Diabetes (n, %)	17 (5.6%)	10 (7.9%)
Non-diabetic (n, %)	284 (94.4%)	116 (92.1%)
Smoking status – yes (n, %)	8 (2.7%)	12 (9.5%)
Non-smoker (n, %)	256 (85.0%)	73 (57.9%)



The data showed that the SSI rate was comparable in both groups of patients, with similar rates of wound infection and it’s remained independent of type of used dressing.

The total number of detected SSIs was 45, in which 30 cases (10%) in Study group (LS) vs 15 cases (11.9%) in Control group (AC). Satisfaction by comfort - 46.9% LS vs 18.8% AC and satisfaction by adherence - 88.3% LS vs 35.5% AC. The patients from LS group showed later onset of SSI symptoms compared to the patients from AC group (median: 15 days, [day 5-24] vs median: 11 days, [day 7-24]).

Although there was no significant difference in SSI readmissions between the two groups (13.3% vs 6.7%, p = 0.45), there was still a considerable reduction in the readmission rate of 49.6%.

The antibiotics consumption to manage SSIs was similar (66.7% vs 70%, p = 0.64).

The cost effectiveness was improved in the LS group with calculated cost savings of £518.36 per 2 months.

Up to *£6000 - Projected annual saving if used on all C-Section patients (*estimated around 3000 patients per year).

Conclusions

The local rates of SSI corresponded to the reported in the literature national UK average SSI rates.

We have achieved an excellent combined response rate (via ISLA) of above 85% for both groups. The results indicate that Leukomed Sorbact should be considered as a dressing of choice for all Caesarean Sections within the Trust.

A selective algorithm for a choice of dressing at the time of CS delivery based on certain characteristics of the patients’ cohort could support this change with future project on expansion of our knowledge on the most encountered micro-organisms responsible for wound infection in our local cohort of women with evaluation of sensitivity to the currently prescribed antibiotics.

There is an indication that a larger research study should be conducted to achieve a statistical significance to support this main conclusion.

References

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