Leukomed® Sorbact® dressings reduce SSI rates in arterial groin incisions: an observational cohort study

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Background

Surgical site infection (SSI) is a common healthcare-associated infection (HCAI) in vascular surgery patients undergoing groin incisions for arterial surgery. Adverse outcomes are numerous, including additional complications, return to theatre, prolonged hospital stay, increased dependency, limb loss and death.[1] Recent studies also highlight the significant environmental impact that SSIs incur.[2]

Following publication of NICE MTG55[3], Leeds Vascular Institute (LVI) introduced the Leukomed® Sorbact® dressing into routine clinical practice for patients undergoing groin incisions for arterial surgery. The study aim was to assess the impact of this strategy.

Objective

The primary outcome measure was SSI. Secondary outcomes include length of stay, readmission rates, reoperation, costs using Patient-Level Information and Costings System (PLICS), and assessment of environmental impact.

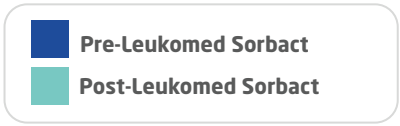
Methods

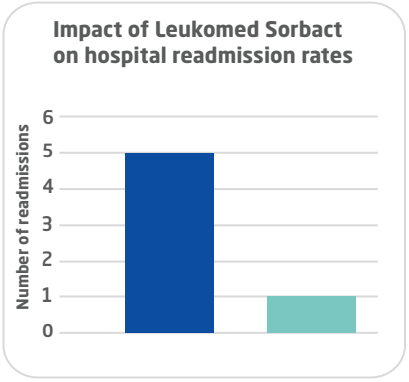
A single-centre cohort study comparing two time periods; July 2021-June 2022 ('Pre-Leukomed® Sorbact®') Versus July 2022 - June 2023 ('Leukomed® Sorbact®'). All groin incisions for femoral artery exposure were included, provided it was clean surgery. Infected cases were excluded. In the Pre-Leukomed® Sorbact® cohort, wounds were covered with a simple film-backed island dressing, and the Leukomed® Sorbact® cohort received a Leukomed® Sorbact® dressing. No other changes were made to clinical practice during the study period.

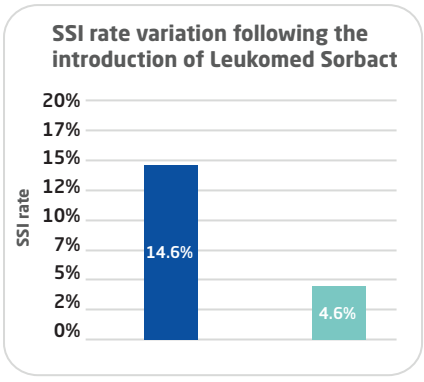
Results

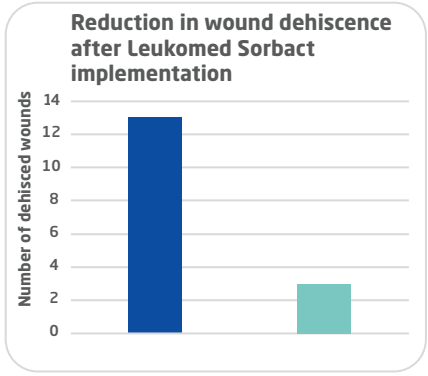
219 patients were included; 132 pre-Leukomed® Sorbact® and 87 Leukomed® Sorbact®.
The two cohorts were well matched in terms of baseline characteristics.

	Pre-Leukomed Sorbact	Leukomed Sorbact
Postop Length of Stay	11.75 (9-14)	10.27 (7-13)
SSI	19 (14.4%)	4 (4.6%)
Readmissions	5	1
Readmission length of stay (days)	76 (Median 14, Range 8-23)	6
Reoperation	4	1
Dehiscence	13 (2 deemed not infected)	3
Average SSI Excess Costs[1]	£39,368	£8,288









A 68% Relative Risk Reduction in SSIs in the Leukomed® Sorbact® dressing group (P = .021). Regression analysis showed patients in the pre-Leukomed® Sorbact® group were at nearly 3.5 times higher risk of SSI than their counterparts receiving a Leukomed® Sorbact® dressing. The reduction in SSI was evident across all procedures and the total cost saving was £31,080.

Cost Analysis

Comparison of episode costs using Patient Level Information and Costing System (PLICS) data; No SSI Vs SSI.

Cost Parameter	No SSI	SSI	Cost difference £ median; (%)
General inpatient cost	£13145	£17842	+£4697 (36%)
Pathology	£181	£454	+£273 (150%)
Drug	£65	£130	+£65 (99%)
Radiology	£752	£2368	+£1616 (215%)
CT	£0	£216	£216
Blood Science	£140	£327	+£187 (133%)
Microbiology	£19	£106	+£87 (458%)
Total	£14,302	£21441	+£7139 (50%)

£2072
Base Cost per SSI NICE

£7139
Median Cost per SSI PLICS

* NICE MTG55 SSI base cost

The NICE base cost of £2072 per SSI[3] appears to be an underestimate. In this study the median excess cost associated with SSI was £7138 - a 50% uplift in base cost without SSI. These costs are for in-hospital only; additional primary care costs would be expected.

Environmental Impact

CO_2 impact of SSI for all patients in the study

		Pre-Leukomed Sorbact		Leukomed Sorbact		
		CO2 impact (kgCO2e)	Number of SSIs	CO2 impact (kgCO2e)	Number of SSIs	% reduction in CO_2
SSI	Superficial	671	7	266	3	60%
	Deep	3035	6	506	1	83%
	Organ/Space	18284	6	0	0	100%
Total		21940	19	772	4	97%

SSIs not only complicate the patient journey but also lead to significant resource use and environmental burden. The majority of this burden stems from excess length of stay and additional surgical procedures, which increase notably with the severity of the infection.[2]

By switching to Leukomed Sorbact which reduced the number of SSIs, this prevented 21,168kg of CO2 emissions, equivalent to 21.2 transatlantic return flights from London to New York.[5,6]

SSI Reduction
68%

Saving*
* NICE MTG55 SSI base cost[3]
£31,080

Reduction in CO2 impact
97%

Conclusion

Application of Leukomed® Sorbact® after arterial groin surgery is simple and associated with a greater than 3-fold reduction in the risk of groin wound SSI in this pragmatic real-world study. With a 50% cost reduction and 96.5% reduction in CO2 impact, both financial and environmental cost savings are demonstrated with reduction in SSI. The dressing requires no additional training costs nor 'special' techniques for successful utilisation beyond a standard island dressing commonly used in routine practice. Further evaluation through randomised clinical trials is needed, but early data is compelling.

References:

1. Totty JP, (2021) The impact of surgical site infection on hospitalisation, treatment costs, and health-related quality of life after vascular surgery. International wound journal, 18(3), 261-268. **2.** Lathan R, Daysley H, Ravindhran B, Lim A, Cutteridge J, Sidapra M, Long J, Hitchman L, Beltran-Alvarez P, Carradice D, Smith G, Chetter I. Environmental and Financial Cost of Surgical Site Infection by Severity following Lower Limb Vascular Surgery. BJS Open. 2025;9(3):zraf015. doi:10.1093/bjsopen/zraf015 **3.** NICE. 2021. Leukomed Sorbact for preventing surgical site infection. NICE National Institute for Health and Care Excellence. 1-17. **4.** NICE. Surgical site infections: prevention and treatment, 2019. Clinical Guideline https://www.nice.org.uk/guidance/ng125 **5.** Department of Transport UK (2023) Journey emission comparisons: interactive dashboard. Available: https://maps.dft.gov.uk/journey-emission-comparisons-interactive-dashboard/index.html **6.** Travel Navigator (2025) Carbon emissions from London to New York. Available: https://travelnav.com/emissions-from-new-york-ny-to-london-united-kingdom

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